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Serial Dept.
OCT 27 1958
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Journal of THE SOCIETY OF ARCHITECTURAL HISTORIANS

Fall 1958

Volume XVII • Number 3

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FALL 1958 • Volume XVII, No. 3

Journal of THE SOCIETY OF ARCHITECTURAL HISTORIANS

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The JOURNAL *of the Society of Architectural Historians is published in March, May, October and December. Manuscripts, news and notes should be sent to the Editor, SAH* JOURNAL, *University of Virginia Graduate School of Business Administration, Charlottesville, Virginia. Change-of-address, membership, subscription and back-issue correspondence should be directed to the Treasurer, Society of Architectural Historians, Swarthmore College, Swarthmore, Pennsylvania. Advertising is handled through Mr. G. E. Kidder Smith, 163 East 81st Street, New York 28, N. Y. Printed in Crawfordsville, Indiana, by R. R. Donnelley & Sons Company of Chicago, The Lakeside Press. The* JOURNAL *is listed in the* Art Index.

THE LEGEND OF THE ALTERNATE SYSTEM AT ST. BÉNIGNE OF DIJON[1]

ALICE SUNDERLAND WETHEY

MEETING IN SOLEMN session in Brescia in 1828 the Athenaeum of that ancient north Italian town announced that its biennial prize and gold medal was to be awarded to Giulio Cordero, curator of the Royal Museum of Egyptian Antiquities in Turin, and that his prize-winning essay, "Dell' italiana architettura durante la dominazione longobarda," was to be printed as part of the *Commentari* of the Athenaeum.[2] Thus in 1829 there appeared in print what may well be the earliest presentation of the theory that, far from constituting merely the local style of North Italy, Lombard architecture was widely disseminated through northern Europe, and that the important mediaeval schools of architecture of Normandy and England had their roots in Lombardy. In a remarkably erudite expansion of his argument, surprising in a man whose professional life was concerned with ancient Egypt rather than Europe in the Middle Ages, Cordero traces the career of the powerful mediaeval churchman, William of Volpiano, copiously annotating it with mediaeval Latin sources. Born in Lombardy, the great William was eventually reformer of some two score monasteries scattered all the way from the English Channel to the Adriatic, and Cordero draws the clearly patriotic yet not unlikely conclusion that William himself was the transmitter of the Lombard style to the north.

Cordero's theory was to have a long and vigorous life. In 1856 in "Sull' architettura di stile lombardo,"[3] appeared another Italian argument that through William of Volpiano the Lombard system of architecture passed from Italy to Dijon, and thence to Normandy where in the first years after the year 1000 there began the construction of churches and convents in the Lombard style. In 1875 Gustave Chevallier in his long biography of William concurs with this view in saying that the abbot of St.-Bénigne had the idea of seeking in his native land both model and workmen, and that he wished to undertake nothing new at Dijon before having seen again and studied the marvellous basilicas of Italy.[4] By the turn of the twentieth century other Frenchmen were enthusiastically promulgating the theory. Thus Camille Enlart in 1902 said that in the church of St.-Bénigne of Dijon rebuilt by William of Volpiano there were evident connections with Lombard art, and that the same historical explanation accounted for Lombard features in the Norman school.[5] The idea passed into English writing and as late as 1938 Arthur Gardner wrote, "Famous builders like William of Volpiano and Lanfranco have been cited as having introduced the style from Lombardy."[6]

Dissenting voices have been few. Lefèvre-Pontalis in 1912 strikes an early note of caution, "One must not exaggerate the influence of the abbot William of Volpiano, who rebuilt . . . St.-Bénigne following the style supposedly imported from Lombardy into Normandy."[7] In 1917 Arthur Kingsley Porter commented that, "The church of St.-Bénigne at Dijon, which S. Guglielmo reconstructed, has perished. From drawings . . . . The only features in it which betray Lombard influence are the arched corbel-tables . . . on . . . the towers . . . . As for the cubic capitals upon which so much emphasis has been laid by Enlart, they are utterly unlike anything to be found in Lombardy . . . and are clearly of purely local origin. The work of S. Guglielmo in carrying Lombard forms into Burgundy therefore reduces itself to very small dimensions . . . . The great emphasis which has been laid upon S. Guglielmo as a transmitter of artistic ideas, therefore, seems to be entirely misplaced."[8]

Mr. Porter did not discuss the interior supports of the vanished church, nor mention what had by his time come to be an integral part of the theory, that one of the important Lombard features of William's church in Dijon was the use of the alternate system in the arrangement of the piers. Possibly first expounded in Abbé Chomton's monumental work on St.-Bénigne in 1900,[9] it was taken up by most later writers on the subject. Chomton's reconstruction drawings of the nave of St.-Bénigne give a graphic exposition of his views. A. Contant a year later cites Chomton and states without qualification what is only an assumption that "the piers show that alternating scheme fairly common in the period."[10] By 1909 Calmette, exploring the possibilities of wooden roofing as against vaulting in the totally vanished basilica, is even bolder

ALICE SUNDERLAND WETHEY (*Mrs. Harold E. Wethey*) *is the authority on the Romanesque abbey-church of St.-Bénigne in Burgundy.*

and speaks of "the explicitly stated existence of the system of alternation of supports . . . "[11] Marcel Aubert in 1928 says, "The piers . . . appear indeed to have been alternating."[12]

On the opposite side of the argument, however, in that same year, was Charles Oursel, though he acknowledges that there was undoubtedly dissymmetry in the piers. He holds that it is certainly possible to imagine some other arrangement for them besides alternation. He astutely observes, "Hesitation in presuming the alternation of the piers in the nave of St.-Bénigne is all the more legitimate, since no single example of this method is known in Burgundy . . ."[13] Subsequently in 1945 Raymond Rey remarks with scholarly qualification, "The piers were, perhaps, following the type common in Lombardy, alternately weak and strong."[14] On the other hand, as late as 1956 Jacques Thirion in reviewing a recent article by Charles Oursel makes the surprisingly categorical statement, "It is generally agreed, following a fairly obscure passage of the *Chronicle of St.-Bénigne*, that the basilica of Dijon . . . exhibited an alternation of the piers comparable with that of Jumièges."[15]

A final element has been added to this conglomerate theory by Louis Grodecki in an article on the Romanesque sculptures of Bernay.[16] He feels very certain that the precise shape of the piers of St.-Bénigne can be fixed, that they were "piles composées" of the type which was widely spread throughout France by the middle of the eleventh century. Such a compound Romanesque pier consisted of a rectangular core with a single attached half column on each of the four cardinal faces.

As thus developed and elaborated in the imaginations of French scholars the theory appears to be beautifully logical and complete: The architecture of St.-Bénigne was influenced by the Lombard style, its supports showed the characteristic Lombard alternation of strong and weak elements, and finally, according to M. Grodecki, the piers themselves were of the usual Romanesque compound type, made up of a rectangular core with four attached half columns. But is this theory necessarily true, simply because it seems so logical?

Rather strangely ignored in all of this development is the evidence of Dom Plancher, the scholarly mid-eighteenth-century prior of St.-Bénigne, who in 1739 published the scale drawings of the eastern parts of the church complex which are essential to any modern study of the vanished monument.[17] Produced fifty years before the holocaust of the French Revolution, these drawings and the accompanying descriptions provide invaluable information of an eye-witness. Dom Plancher writes, using the present tense: "at the west of this rotunda . . . are six columns . . . forming a center [or apse] . . . and at each side . . . *there is a great rectangular pier of masonry, six feet through, decorated in the upper part by four columns in the four corners, just as they are described in the Chronicle.*"[18] Furthermore, on the plan of the rotunda at the main level is the legend: "P. Two of the forty great rectangular piers on which was supported the ancient church, and which were ornamented at the four corners above by four columns."[19] Again on the plan of the rotunda at the gallery level (Fig. 1) is the legend: "L. Great rectangular piers decorated with columns in the corners."[20] Thus M. Grodecki's theory of compound piers seems completely refuted at the outset by the building itself as it existed in Plancher's day. But we will return to this matter later.

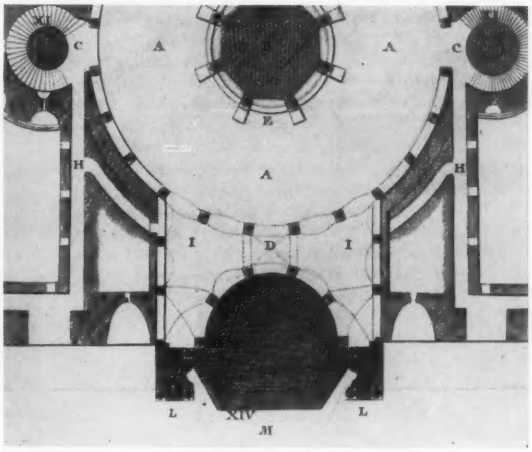

FIG. 1. St.-Bénigne, Dijon. Plan of rotunda, gallery level. Detail. (After Plancher)

It is certainly relevant and very important to this discussion that Dom Plancher thus clearly holds that the forty piers of St.-Bénigne were all very large, that they were rectangular and were ornamented in the upper part by columns in the corners. In 1893 Joseph Moreau in publishing the eighteenth-century views of the rotunda of St.-Bénigne painted by P. J. Antoine (Figs. 2, 3, 4) similarly describes the vanished basilica as "a vast church . . . carried on *forty large piers* . . ."[21]

Yet at the turn of the twentieth century this line of thought abruptly ceased with the acceptance by the French of the theory of Lombard origin for many of the elements of their church architecture. Abbé Chomton in 1900 may have been the first to make a new interpretation of the eleventh-century description of the church of William of Volpiano.

Leaving entirely aside for the moment the archaeological evidence preserved by Plancher, we will now take up the complicated Latin passage from the *Chronicle of St.-Bénigne*[22] which is the source of these differing views. It reads as follows: *Que . . . fulciturque centum viginti et*

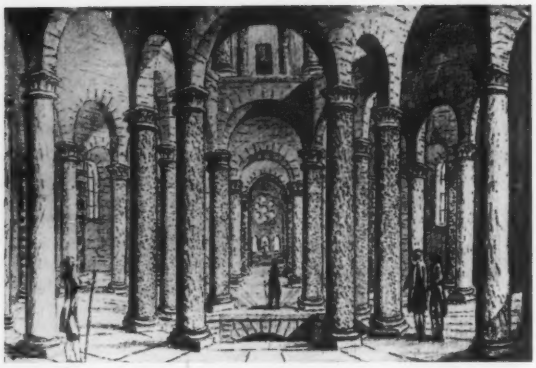

FIG. 2. St.-Bénigne, Dijon. Interior of rotunda, main level. After P. J. Antoine painting. (Dijon, Bibliothèque municipale)

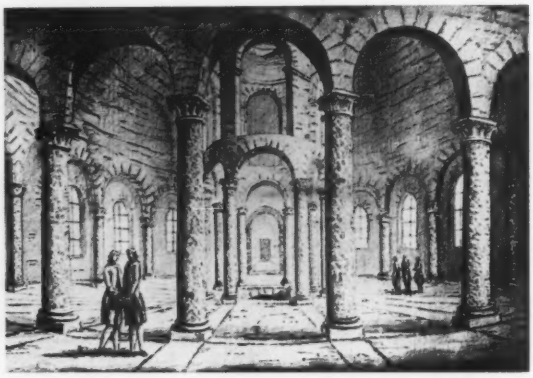

FIG. 3. St.-Bénigne, Dijon. Interior of rotunda, gallery level. After P. J. Antoine painting. (Dijon, Bibliothèque, municipale)

FIG. 4. St.-Bénigne, Dijon. Exterior of rotunda. After P. J. Antoine painting. (Dijon, Bibliothèque municipale)

una columnis quarum nonnule iuxta capita fortissimarum que sunt XL pilarum quadrangulatim statute una quasi simul coronari videntur corona quamvis non unius sit magnitudinis omnium forma.[23]

Any translation of Latin so cumbersomely phrased turns out to be more of an interpretation than a genuine translation, if it is put into language that is acceptable in any modern idiom. The present writer prefers to make an accurate though awkward rendition in order to demonstrate the literal meaning: ". . . and which is supported by one hundred and twenty-one columns, of which some, placed in the four angles near the tops of the very strong piers, of which there are forty, seem to be crowned almost as though by one crown, although the form of all is not of one size."

By contrast, Abbé Chomton's version of 1900, which is a free interpretation of the text, has a disarming clarity: "One hundred and twenty-one columns support the vault. Some of these columns are placed at the four angles of the strongest among the piers—of which the total number is forty—in the upper part of the pier mass. Now, although they did not all have a shaft of the same size, they all together seemed to carry one and the same crowning member." (*Cent vingt et une colonnes en soutiennent la voûte. Quelques-unes de ces colonnes sont posées aux quatre angles des plus forts d'entre les piliers—dont le nombre total est de quarante—dans la partie haute du massif. Or, bien qu'elles n'aient pas toutes un fût de même grandeur, elles paraissent porter toute ensemble un seul et et même couronnement.*)[24] This translation clearly suggests that the piers were of different sizes. The conclusion as developed by Chomton is that large piers alternated with small piers, as in the so-called alternate system of Lombardy.

It is the superlative form *fortissimarum* which forms one of the chief difficulties in the translation of this passage. In classical Latin such a form was used for two different purposes. One was to designate the degree or the quality of one unit or group as compared with that of two or more others, while the other purpose was merely to emphasize the quality attributed to a single unit or group. In the latter use there was no comparative connotation, but only special emphasis. As so used the superlative form took the place of an adverbial modifier such as the English word "very" which has no direct equivalent in the Latin language. Classical illustrations of these two uses of the superlative come readily to mind. Thus, in the first chapter of Caesar's *Commentaries,* in speaking of the three tribes severally occupying the three parts of Gaul, Caesar says, using the superlative form *fortissimi,* "Of all these the Belgians are the bravest" (*Horum omnium fortissimi sunt Belgae*). This superlative was used in the same sense as the English superlative, to give a relative connotation. A few lines further on, in speaking of the Rhine, without reference to any other river, he says, using the superlative forms *latissimo atque altissimo,* that it is "very wide and

very deep" (. . . *una ex parte flumine Rheno, latissimo atque altissimo, que agrum Helvetium a Germanis dividit* . . .). These superlatives were used for the mere purpose of giving special emphasis, certainly not to indicate that Caesar considered the Rhine the widest and deepest river in the world.

These two usages continued into mediaeval Latin, according to Miss Berthe Marti, a specialist in mediaeval Latin at Bryn Mawr College, but the distinction between the two became blurred, and it is unwise today to be too categorical as to which meaning was intended in any particular passage. However, the important fact is that in another passage of the *Chronicle of St.-Bénigne* an unequivocal use of this second form of superlative occurs.

A diagram, that device of grammarians beloved for disentangling knotty constructions, reinforces this argument (Fig. 5). In the diagram each word of this complicated passage falls neatly into one and only one place. *Pilarum* can now be seen to be modified in coördinate fashion both by *fortissimarum* and by the adjective clause *que sunt XL*. Thus grammatical analysis shows that the Chronicler wrote that the piers were all very strong and that there were forty of them. Plancher's interpretation takes on a new validity in the light of modern grammatical methods.

The matter of the arrangement of the columns on the piers has become a second area of disagreement, for the word *quadrangulatim* is likewise a subject of controversy.

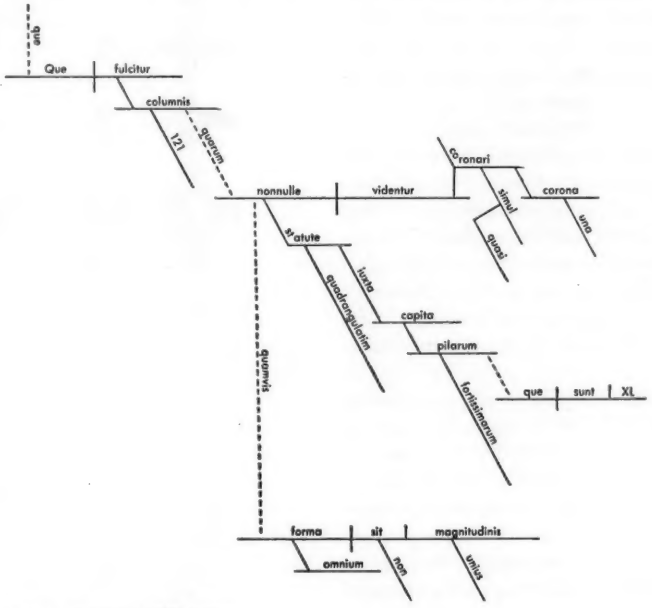

FIG. 5. Grammatical diagram.

Where reference is made to the "very sacred body of Saint Bénigne, martyr" (*sacratissimum corpus sancti Benigni Martiris*),[25] the superlative is obviously used only for emphasis, not to place Saint Bénigne above all the other saints of the Church! By analogy it is not impossible or unreasonable to believe that in the passage dealing with the piers of the basilican church, which the Chronicler treats as a single group without separating them into different categories, the superlative *fortissimarum* may have been used solely for emphasis, and not to designate any degree of comparison. An entirely proper translation could, therefore, be "the very strong piers," rather than "the strongest among the piers."[26] Such was Dom Plancher's interpretation in the eighteenth century, and such is the belief of the author of this article.

Here, as in the matter of the superlative, the lack of grammars for mediaeval Latin forces one to cite a classical grammar or the unpublished statement of some modern authority on mediaeval language. The invaluable work of Dufresne and Ducange[27] is a dictionary or glossary, not a grammar, and it unfortunately provides nothing to resolve the problem beyond the fact that the definitions of *quadrangulare* and *quadrangulum* take due cognizance of their derivation from *quattuor* and *angulus*. In dictionaries of all languages words of this root are invariably defined as "having four angles." Grammatical analysis and the diagram (Fig. 5) of the sentence show that this adverbial form can modify *only* the past participle *statute* ("placed") and that as an adverb *under no circumstances* can it be deemed to modify the noun *pilarum*. Again Dom

Plancher's position seems vindicated. I have translated the word as "in the four angles," because "quadrangularly" is so rare as to have practically no meaning in English, and the term "in quadrangle," which means precisely "in the four angles," is an expression of heraldry which also conveys no meaning to the lay reader.

Miss Marti of Bryn Mawr, my modern authority, has commented as follows on my diagram and translation: "As a latinist, I can only confirm the excellence of your diagram. . . . People can offer other translations, which would not agree with yours entirely and, from the point of view of the language alone, could be correct. But no one can say that yours violates any grammatical law, does not construe, or represent the Latin text." [28]

However, the case is not thus easily settled, for Miss Marti says elsewhere in the same letter: "*Quadrangulatim* may mean 'in the four angles,' but it could also mean some other disposition where four angles are involved (cross-shaped, lozenge-shaped, etc.) . . . But your version is certainly one of the possible ones, if not the only certain one." Thus an interpretation of this word as descriptive of the Romanesque compound pier with four attached half columns, which M. Grodecki is so sure existed at St.-Bénigne, is not wholly impossible. Nevertheless, M. Grodecki's view disregards the archaeological evidence presented above, as recorded by Plancher's drawings of the two rectangular piers with columns in the upper corners, as they still existed in the eighteenth century.

Perhaps other arguments beyond mere grammatical ones can be found to help decide the matter one way or the other. There is the interesting fact that the church of Vignory, an affiliation of St.-Bénigne, built in the second quarter of the eleventh century, has two piers in the crossing, each of which has corner columns on two of their four corners, at the ground level, however.[29]

A much more important circumstance is the shape of the late twelfth-century pier excavated in St.-Bénigne around 1880 and published by Chomton in 1909.[30] Dating from the partial rebuilding of the nave of St.-Bénigne in the twelfth century, it has been curiously ignored by recent writers on the subject of the great abbey of Dijon. The pier is most remarkable for its flat cardinal faces and colonnettes decorating the angles only (Fig. 6), and its unusual form may well show a continuation of the tradition begun by the earlier Romanesque piers described and drawn by Plancher (Fig. 1). Certainly if St.-Bénigne had the usual type of Romanesque compound pier in the first quarter of the eleventh century, it becomes very difficult to explain the appearance later in the twelfth century of a totally different form which lies outside of the ordinary canon of Romanesque design and development.

It is impossible to publish here the whole lengthy argument of my doctoral thesis as to the arrangement of the supports and superstructure in the church of William of Volpiano. Nevertheless, it can be said that the very number of one hundred and twenty-one columns mentioned in this passage of the *Chronicle* affords an additional argument in favor of a regular rather than an alternate system, and in favor of an arrangement with corner columns at an upper level. By no means all of the forty piers could ever have been decorated with four columns each, because that would mean that there would have been one hundred and sixty of them. However, the five-aisled basilican plan which St.-Bénigne most certainly had offers a ready ex-

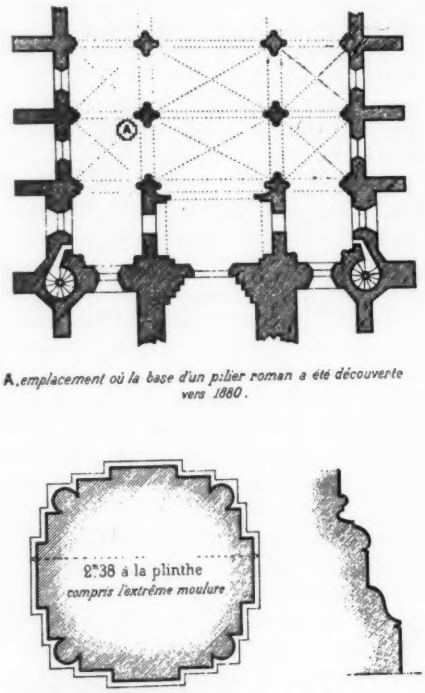

FIG. 6. St.-Bénigne, Dijon. Twelfth-century pier. (After Chomton, *Mémoires*)

planation of this apparent contradiction.[31] The lines of piers dividing the side aisles could have been only of a single story and surely carried the outer walls of the triforium gallery. Thus only the lines of piers flanking the nave and sanctuary could ever have been described as having decorative columns at an upper level.

Some of the one hundred and twenty-one columns still existed in the eighteenth century and are shown in Plancher's drawings. Fourteen are on the main level and consist of the six columns of the main apse arcade and the pairs of columns which flank the side apses. At the gallery level can be seen eighteen more. There are six columns in the apse arcade at that level also (Fig. 1), and

twelve more are distributed around the openings and in the walls of the triforium gallery and in the corners of the great piers already discussed. All the rest of the columns in those two plans of Plancher can be shown by careful comparison of the description of the *Chronicle* with Plancher's drawings to belong to what the Chronicler called the rotunda.[32]

Thus the position of thirty-two of these one hundred and twenty-one columns of the basilican church is fixed without question by Plancher's drawings just cited. It is the disposition of the remaining eighty-nine which interests us here. As a first consideration we might look at arrangements with the usual Romanesque compound pier. Jumièges, long associated with William of Volpiano, but whose present ruined Romanesque church postdates his lifetime, presents a suitable example. Its alternate system with simple columns in the "weak" bays and alternate "strong" piers of compound form with the nave shaft continuing up to the clearstory windows, could never be fitted into the *Chronicle's* description. Here there are no half columns at the gallery level on the other three sides of even the compound piers, and the full number of columns in such an arrangement would fall far short of one hundred and twenty-one.[33] The later and far more complicated alternating system at St.-Etienne of Caen (1066–1086), on the other hand, has extra colonnettes at both the nave and gallery levels fitted into the corners of the elaborately recessed piers. Here the total number of colonnettes would prove to be far in excess of the number stated in the *Chronicle*, and *quadrangulatim*, no matter how one translated it, would be entirely inadequate to describe such a complex arrangement. Yet, if one follows a literal translation of the *Chronicle*, the number of columns given there can be readily and exactly accounted for: in such an arrangement the upper corners of all the piers flanking the nave and sanctuary are decorated with corner colonnettes.[34]

Is any further light on the question to be found in the history of French ecclesiastical architecture of the late tenth and early eleventh century? A precise chronology of the development of pier forms from the circular, rectangular, and cruciform shapes characteristic of the late tenth century into the compound types of the Romanesque period might indeed do much to clarify this matter, but such a chronology is not yet possible. However, the matter of the earliest appearance of the square pier with four engaged half columns is touched upon briefly from time to time by writers dealing with early eleventh-century buildings. Their arguments tend to revolve around the same very limited series of monuments.

Carl Hersey in his article in the *Art Bulletin* in 1943 [35] discusses in some detail the pier shapes of the church of St.-Martin of Tours in an effort to determine whether the compound piers in the transept could have been part of the church of Hervé consecrated in 1014. He points out that this type of pier with rectangular core and engaged half columns on the cardinal faces appears commonly only after the middle of the century, but feels that these piers can surely be dated as early as 1030 on the basis of similar piers in the crypts of the cathedrals of Auxerre and Nevers. He further suggests that in view of the identical pier form at St.-Germain-des-Prés about 1005 these piers could indeed be said to belong to Hervé's church. Nevertheless, he prudently leaves the argument open by saying that it is possible that "in 1014 the church was not entirely completed, and that work continued on the transept with the piers assuming form at the end of the first quarter of the century or a little later."

Louis Grodecki in his article on the capitals of Bernay in the *Bulletin monumental* of 1950 is more daring. He states categorically that "the 'compound' pier with four half columns appeared in France shortly after the year one thousand." [36] He too cites Auxerre and Nevers, and St.-Germain-des-Prés, adding to the list St.-Bénigne of Dijon and St.-Wandrille in Normandy with the following explanatory comment: "Although compound piers were not found in the excavations [of St.-Wandrille], the presence of engaged columns against the side walls at the entrance to the ambulatory proves that the piers of the crossing, at any event, were compound with engaged columns; since this same technique of supporting cross arches appears also in the preserved portions of St.-Bénigne of Dijon, it seems to us difficult to doubt the existence of piers with half columns in the great abbey of William of Volpiano." [37] This correlation of engaged columns in the wall of an ambulatory with a nave system of rectangular piers bearing four engaged half columns seems to the present author to have no validity whatever. Indeed, a church can be cited which has engaged columns in the ambulatory wall and contemporary nave supports which are simple rectangular piers. This is the church of Vignory, already mentioned above, affiliated with St.-Bénigne from 1031, finished and dedicated in 1050–1052.[38] Its existence seems to me to considerably weaken M. Grodecki's argument.

The Abbey of Bernay in Normandy, connected with St.-Bénigne after 1017 through the person of William of Volpiano, is also often cited in the lists of churches showing early examples of compound piers. Begun, it has been said, with the sanctuary with its compound piers between 1013 and 1017, its nave was originally planned with piers of a simple rectangular type articulated only by a flat pilaster on the aisle side. To subsequent alteration of the plans are due the attached half columns on two sides of the nave piers. Later building campaigns M. Grodecki postulates as between 1017–1020 for the sanctuary and 1028–1030 for the nave.[39] However, the documents are all too vague for certainty at any point in the building.

St.-Germain-des-Prés, likewise connected with St.-Bénigne, for its reform was entrusted to William of Volpiano in 1026, has recently, startlingly, been removed from the series of monuments displaying early examples of Romanesque compound piers. In 1950 Jean Hubert in the *Bulletin monumental* established the fact that the nave of St.-Germain is not contemporary with the tower-porch and showed convincingly that only the latter can with certainty be assigned to the abbacy of Morard (990–1014). He concluded that the nave is the result of a subsequent building campaign, probably toward the middle of the eleventh century.[40]

It obviously cannot yet be demonstrated with this series of monuments that the Romanesque compound pier actually appeared anywhere in France soon after the year one thousand as M. Grodecki so flatly stated. Likewise it cannot yet be shown that such a pier ever existed in William of Volpiano's church at Dijon. Until excavations at St.-Bénigne actually yield a pier of this type and contradict the well-established evidence of Dom Plancher in the eighteenth century any such assumption about the early eleventh-century church remains in the realm of pure speculation.

The compound pier at St.-Bénigne thus appears to be fiction not fact. For the rest of the theory, that the early eleventh-century basilica of Dijon was influenced by the Lombard style and that its supports showed the Lombard alternate system, it is likewise pure hypothesis but one which has become architectural legend. It is a long way back in time and space to the meeting of the Athenaeum of Brescia in 1828. Surely not many modern writers on mediaeval architecture realize that their opinions and theories are still being colored by the ideas that first gained an audience there.

1. For introductory material on the various problems involved in the early Romanesque church of St.-Bénigne, see my previous article, "St. Bénigne at Dijon and the Roman Foot," *Journal of the Society of Architectural Historians*, XVI, No. 3 (October, 1957), 12–15.

2. Cav. Giulio Cordero, de' conti di S. Quintino, conservatore del Reale Museo dei Monumenti Egiziani in Torino, "Dell' italiana architettura durante la dominazione longobarda," *Commentari dell' Ateneo di Brescia, 1828* (Brescia, 1829). See especially pp. 158–162.

3. The article is signed merely Magister Comacino, but according to Arthur Kingsley Porter, *Lombard Architecture* (New Haven, 1917), I, 455, the author is probably Celeste Clericetti. The full citation is: "Sull' architettura di stile lombardo," *Giornale dell' ingegnere-architetto ed agronomo*, Anno IV (1856), pp. 59–65.

4. Abbé Gustave Chevallier, *Le vénérable Guillaume, abbé de Saint-Bénigne de Dijon* (Dijon and Paris, 1875). See p. 77.

5. Camille Enlart, *Manuel d'archéologie* (Paris, 1902), I, 208–209: ". . . l'on peut constater qu'à Saint-Bénigne de Dijon, les substructions de l'église rebâtie par Guillaume témoignent, . . . , de rapports évidents avec l'art lombard . . . Il en est de même dans l'école normande, et le fait a également son explication historique . . ."

6. Arthur Gardner, *French Church Architecture* (Cambridge, 1938), p. 27.

7. E. Lefèvre-Pontalis, "Les plans des églises romanes bénédictines," *Bulletin monumental*, 76 (1912), 448: "il ne faut pas exagérer l'influence de l'abbé Guillaume de Volpiano qui fit rebâtir . . . Saint-Bénigne sur la prétendue importation de l'architecture lombarde en Normandie."

8. Arthur Kingsley Porter, *op. cit.*, I, 157–158.

9. Abbé L. Chomton, *Histoire de l'église Saint-Bénigne de Dijon* (Dijon, 1900).

10. A. Contant, "L'église Saint-Bénigne de Dijon à travers les ages," *Bulletin du diocèse de Dijon*, 19 (1901), 264: "les piliers présentaient cette forme alternée assez commune à l'époque."

11. M. Calmette, "La couverture de nef à Saint-Bénigne de Dijon," *Mémoires de la commission des antiquités du département de la Côte d'Or*, 16 (Dijon, 1909–10), p. 17: "L'existence formellement attestée du régime de l'alternance des supports . . ."

12. Marcel Aubert, "L'église Saint-Bénigne," *Congrès Archéologique* (1928), p. 20: "Les piles . . . paraissaient bien avoir été alternées."

13. Charles Oursel, *L'art roman de Bourgogne* (Dijon, 1928), p. 29: "L'hésitation à présumer l'alternance des piles sur la nef à Saint-Bénigne est d'autant plus légitime qu'on ne connaît aucun exemple de ce parti en Bourgogne . . ." See also pp. 53–54.

14. Raymond Rey, *L'art roman et ses origines* (Paris, 1945), p. 156: "Les piles étaient, peut-être, suivant le type fréquent en Lombardie, alternativement faibles et fortes."

15. Jacques Thirion, "Architecture religieuse," Chronique, *Bulletin monumental*, 114 (1956), 128: "On admet généralement, d'après un passage assez obscur de la chronique de Saint-Bénigne, que la basilique dijonnaise, commencée en 1002, présentait une alternance des piles comparable à celle de Jumièges."

16. Louis Grodecki, "Les débuts de la sculpture romane en Normandie, Bernay," *Bulletin monumental*, 108 (1950), 24: "La pile 'composée' à quatre demi-colonnes apparaît en France peu après l'an mille: à Saint-Germain-des-Prés de Paris (avant 1021), très probablement à Saint-Bénigne de Dijon et, en Normandie même, a Saint-Wandrille (avant 1031)."

17. Dom Plancher, *Histoire générale et particulière de la Bourgogne* (Dijon, 1739), Vol. I.

18. *Ibid.*, p. 488: "A l'occident de cette Rotonde . . . sont six grosses colomnes . . . lesquelles forment un centre . . . & des deux côtez . . . il y a une grosse pile quarrée de maçonnerie de 6 pieds de large, ornée par le haut de quatre colomnes aux quatre coins, telles qu'elles sont décrites dans la Chronique."

19. *Ibid.*, p. 489: "P. Deux des quarante grosses piles quarrées sur les quelles étoit apuyée l'ancienne Eglise, et qui étoient ornées aux quatre coins d'enhaut de quatre colonnes."

20. *Ibid.*, p. 491: "L. Grosses piles quarrées ornées de leur colonnes dans les coins." The great rectangular piers flanking the apse arcade are actually shown in the plan as having a single column on each of the free-standing corners at this level. The fourth corner of each pier stands against a wall, thus making any decorative element there impracticable. This circumstance is certainly an indication that Plancher was drawing what he saw, not reconstructing something on paper from the description in the *Chronicle*.

21. Joseph Moreau, *Dijon à la fin du XVIIIe siècle. Quarante-deux vues inédites d'après les gouaches de P. J. Antoine*, Ingenieur de la Province et des Etats de Bourgogne (Dijon, 1893), p. 71: ". . . une vaste église . . . portée sur quarante gros piliers . . ."

22. The Latin title is *Chronicon Sancti Benigni Divionensis*. For a discussion of this eleventh-century manuscript and references to modern editions, see my article cited in note 1, "St. Bénigne at Dijon and the Roman Foot," p. 12 and note 9.

23. The transcription was made by the author directly from the *Chronicle* itself. For a readily accessible publication, see Victor Mortet, *Recueil de Textes* (Paris, 1911), p. 30.

24. Abbé Chomton, *op. cit.*, p. 98.

25. Quoted directly from the *Chronicle*. See Mortet, *op. cit.*, p. 27.

26. This argument, lacking only the comment of a specialist in mediaeval language, appeared first in my unpublished doctoral

thesis, *The Early Romanesque Church of St. Benignus of Dijon* (Harvard University, 1946). This translation of the superlative was accepted by all those in charge of my dissertation, Messrs. Kenneth J. Conant, Wilhelm Koehler, and Frederick B. Deknatel. Later in 1946 the thesis was read by Mr. Richard Krautheimer, now of New York University, and in the letter of suggestions which he subsequently sent me he never questioned or in fact ever mentioned my translation of this superlative form. Such a translation could scarcely be completely wrong and yet passed by such a battery of experts in matters mediaeval.

There is a ready explanation of the dissymmetry of which Oursel spoke (*op. cit.*, p. 28), and which the phraseology of the passage clearly suggests: ". . . columns, of which some . . . seem to be crowned almost as though by one crown, although the form of all is not of one size." I have construed this sentence to mean that all of these columns, irrespective of their length, carried impost blocks at the same level. Four columns of greater length than the rest could appropriately have been placed on the inside corners of the crossing piers, because the long perpendicular lines of the piers are unbroken by the gallery at these corners. The eastern faces of the transepts of Bernay show an analogous arrangement of long and short columns carrying impost blocks at the same level (See Chanoine Porée, "L'église abbatiale de Bernay," *Congrès Archéologique*, 1908, II, 588–614; plate between pp. 604–605).

27. Carlo Dufresne and Domino Ducange, *Glossarium mediae et infiniae latinitates* (Paris, 1845), ed. G. A. L. Henschel.

28. Letter written from Bryn Mawr, dated February 3, 1953.

29. François Deshoulières, "L'église de Vignory," *Bulletin monumental*, 88 (1929), 89–107. Plan on p. 91.

It might here be mentioned that an arrangement of columns in the four corners of piers at the gallery level has no parallel in any other known monument. At Rochester (early XII Century) there are, indeed, corner colonnettes on the simple, massive, rectangular pier blocks which alternate in the gallery with paired colonnettes, but only on the two corners contiguous to the nave. It seems, however, difficult and unreasonable to discard Plancher's evidence solely for lack of surviving examples. There are other elements in St.-Bénigne which are unusual if not unique. The scheme of corner columns used at the ground level occurs sporadically. One can mention Neuwerkkirche in Goslar (XIII Century) and the church of Schwäbish Gmünd (late XII Century). Tournai (first half XII Century) had compound piers with colonnettes in the angles, but combined with four attached columns on the cardinal faces. It is to be found in Moslem design apparently more systematically, as for example in the Mosque of Ibn Tulun, Cairo (IX Century), in the Mosque of El Hakim, Cairo (X and XI Centuries), and in the eighteenth-century buildings in Delhi, India, the Audience Hall and the Pearl Mosque. See Heinrich Glück and Ernst Diez, *Die Kunst des Islam*, Propylaean-Kunstgeschichte (Berlin, 1925), and G. T. Rivoira, *Architettura musulmana* (Milan, 1914). In the crypt of La Couture at Le Mans (*c.* 1020?) one of the numerous supports has something resembling corner columns. This rectangular pier (all but one of the other supports are simple columns) has on the four corners shallow channellings which suggest columns. But these channellings without capitals or bases are not real colonnettes in any sense of the term, and can be nothing more than the dimmest reflection of an arrangement of corner columns.

It is, of course, always possible that a wholly valid reason will eventually be found for discarding the evidence of the great piers shown in Plancher's drawings. I must state here that M. Charles Oursel, whose opinions on things Burgundian I thoroughly respect, believes that the piers were enlarged after the tower fell around 1100, and that consequently the drawing of Plancher does not represent their original size and shape (Oursel, *op. cit.*, p. 28). I find an obstruction to this argument in the fact that throughout the Middle Ages, and in most succeeding centuries as well, each period developed its own style. Piers rebuilt in the early twelfth century would almost inevitably take on a typically twelfth-century form. Since there is nothing twelfth-century about the shape of these piers, it is hard to believe that they were reconstructed in that period.

30. Abbé Chomton, "Note sur la reconstruction partielle de l'église Saint-Bénigne au douzième siècle," *Mémoires de la commission des antiquités du département de la Côte d'Or*, 16 (Dijon, 1909–1910), 21–27. Plate opposite p. 24.

31. Only in such an arrangement could forty piers be fitted into a church of such comparatively small dimensions (128 cubits or 192 feet). Furthermore the *Chronicle* mentions "twin aisles on either side" (*habet hinc et inde geminas porticus dupliciter transvolutas*). See Mortet, *op. cit.*, p. 31.

32. *Rotundo scemate.* See Mortet, *op. cit.*, p. 28. Plancher, *op. cit.*, pp. 489, 491. For small reproductions of Plancher's drawings see my article "St. Bénigne and the Roman Foot," p. 13.

33. I know of no triforium gallery which has piers of this early Romanesque compound form consisting of a rectangular core and a single half column applied to each of the cardinal faces.

34. Chomton side-stepped the whole matter of the number of one hundred and twenty-one columns for he left indeterminate the western end of the church, never fixing the number of bays or the length of the basilica. My own conclusion is that twenty-two piers flanked the nave and sanctuary.

35. Carl K. Hersey, "The Church of Saint-Martin at Tours (903–1150)," *Art Bulletin*, 25 (1943), 1–39.

36. See note 16 above. In addition it might be remarked that note 2 on page 24 of M. Grodecki's article reads as follows: "tell n'est pourtant pas l'opinion de K. J. Conant, *A Brief Commentary . . .*, *op. cit.*, et de son élève, A. Sunderland, *The Church of St. Bénigne of Dijon*, thèse inédite de doctorat de Harvard University (1944); mais leurs restitutions nous semblent inacceptables." Since this is neither the correct title nor the correct date of my thesis (see note 26 above), it is interesting to find in Claude Poinssot, "Le bâtiment du dortoir de l'abbaye de Saint-Bénigne de Dijon," *Bulletin monumental*, 112 (1954), 314, note 2, the following: "Nous ne pouvons pas exposer ici, même sommairement, les différents problèmes, en particulier celui de la date, que posent l'église du XIe siècles et la rotonde de Saint-Bénigne. La question a été renouvelée par une thèse américaine restée inédite (A. Sunderland, *The Church of St. Bénigne of Dijon*, Harvard University, 1944), que nous pouvons connaître par des comptes-rendus de M. K. J. Conant; du reste, jusqu'à nouvel ordre, il me semble difficile d'admettre sans réserves les hypothèses et les reconstitutions de Miss Sunderland." M. Poinssot thus disagrees with my conclusions although he obviously has no knowledge whatever as to what they are. Mr. Conant's reports on them have always been fragmentary in the extreme. M. Poinssot is merely reiterating M. Grodecki's pronouncement, but without quoting him.

37. Grodecki, *op. cit.*, p. 24, note 3: "quoiqu'on n'ait pas retrouvé des piles 'composées' dans les fouilles [de Saint-Wandrille], la présence de colonnes engagées dans les murs lateraux à l'entrée du déambulatoire prouve que les piles de croisée, toute au moins, étaient composées à colonnes engagées; cette même technique de soutenir les arcs-doubleaux se retrouvant dans les parties conservées de Saint-Bénigne de Dijon, il nous paraît difficile de douter de la présence des piles à demi-colonnes dans la grande abbaye de Guillaume de Volpiano."

38. These dates are from *Abbayes et Prieurés de l'ancienne France, Vol. XII* (*Vol. XLV, Archives de la France monastique*), Province ecclésiastique de Lyons, Première Partie: Diocèse de Langres et de Dijon (Paris and Ligugé), 1941, pp. 448–449. Vignory is something of a museum of early pier forms: simple rectangular and circular ones in the nave; two crossing piers with a half column on one of their faces, a third one with half columns on two of its faces, and the fourth with half columns on three faces; and finally intermediate piers in the crossing with corner colonnettes.

39. Grodecki, *op. cit.*

40. Jean Hubert, "Les dates de construction du clocher-porche et de la nef de Saint-Germain-des-Prés," *Bulletin monumental*, 108 (1950), 69–84. M. Grodecki, however, rejects these findings without explanation, *op. cit.*, page 24, note 1: "Malgré les récentes objections de M. J. Hubert, nous ne pensons pas pouvoir abandonner la date établie par Lefèvre-Pontalis, c'est-à-dire l'abbatiat de Morard (996–1014)."

FILARETE AND CENTRAL-PLAN ARCHITECTURE

JOHN R. SPENCER

TRADITIONALLY ANY DISCUSSION of Antonio Averlino, called Filarete, must begin with an apology. This custom begun by Vasari is not easily flaunted. I would suggest, however, that Filarete studies have a greater need for apologetics than for apologies. Filarete's contemporaries and immediate successors thought quite highly of him, yet Vasari's criticism of the treatise and the doors of St. Peter's cut short any just evaluation of this much maligned artist and established a traditional condemnation which has been repeated with only minor variations down to the present.[1] To a nineteenth-century purist a Florentine who could not build like Brunelleschi, cast like Ghiberti, or write like Alberti must certainly have been a medieval anachronism deserving of the harshest condemnation. Still, an artist who introduced the plunging horse motif for a projected equestrian monument twenty years before Pollaiuolo and twenty-five to thirty years before Leonardo, and who was among the first to investigate the possibilities of central-plan Greek cross churches does not require an apology. This brief paper could perhaps be considered a preliminary attempt to make a reasoned and unprejudiced re-evaluation of Filarete's contribution to Renaissance art.

Perhaps the simplest means to this end is through the architectural projects found in Filarete's treatise. Although Filarete's place in the history of city planning is well known, there has not been any concentrated effort to study the private, public and religious architecture of his ideal city. Lazzaroni and Muñoz published only two elevations of the seven central-plan structures that appear in the treatise and none of the plans. Von Oettingen's edition of the treatise omits or abridges so much of the original text that the readings of the whole are in doubt.[2] Even the manuscripts must be used with caution since twenty-four drawings are lacking in the best extant version and those included do not always conform to the dimensions and details of the text. For example, Filarete's minaret-like towers are the fault of the illustrator. When they are drawn to the dimensions stated in the text (Fig. 7), they are very like the campanili which still dot the plains of Lombardy and the Veneto. It becomes clear, then, that the drawings must be taken with the text of the treatise in an attempt to reconstruct Filarete's architecture. Fortunately, he generally provides enough information to make such a reconstruction possible. The results are sometimes surprising but always fruitful when taken in conjunction with the development of Italian Renaissance architecture.

In general the plans of Filarete's Greek cross churches are quite typical of preoccupations with geometry and simple arithmetic proportions which we consider characteristic of fifteenth-century Florence. Significantly, he begins with the cross in the square and progresses toward the free-standing Greek cross. The square enclosing the cross controls and suggests the forms which can be generated within and outside its perimeter as well as the proportions of these forms. The plans are all based on the larger square divided by three or four or their multiples. Unlike his contemporaries Filarete is not at all concerned with the circle. No strictly cylindrical building appears in his treatise; the few times the form does occur it is always related to forms derived from the square or rectangle. As a result his proportions tend to remain quite simple. When complex proportions do occur they are frequently caused by the placing of the wall. Filarete avoids this problem wherever possible by placing the walls outside, inside or astride his outline drawing in an attempt to maintain the original relations between a major and minor space. Despite the rigorous simplicity of the plan and the rather strict compartmentalization of interior volumes which the plan suggests, the exterior elevation is treated in a free and sculptural manner. Discrepancies between plans and exterior elevations indicate that Filarete intended either to bring certain elements outside the original perimeter or to remove superfluous intervening spaces. The result is a strongly modelled exterior with towers and sometimes the mass of the nave brought forward to create a type of façade without parallel in the fifteenth century. Filarete's mode of planning and the results achieved are essentially those of his time. He feels the need of a controlling principle, yet he is fully capable of modifying or rejecting that principle for final

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JOHN R. SPENCER *presented a briefer version of this paper at the 1958 annual meeting of the Society in Washington. He is preparing a larger study on Filarete's art and theory.*

visual effects. We should realize, however, that the architecture of the treatise has not yet reached the stage of a working drawing. Filarete is only concerned at this point in determining the disposition and the dimensions of his forms and their relation to each other. These factors are in turn both limited and abetted by his choice of the original form and by the method chosen to subdivide it.[3]

The simplest statement of Filarete's Greek cross plan and of the square divided by thirds occurs in a market church (Figs. 1–2). The plan of the center of the city indicates three of these churches on the commercial piazze of Sforzinda. They are all small, forty *braccia* square, or slightly less than eighty feet on a side, and all are organized according to the same plan. The basic square is divided by thirds into nine smaller squares. The corner squares are converted into chapels, leaving a cruciform shape on the cross axes for the nave and transept which are covered by barrel vaults. The octagonal dome on a high drum becomes the typical element of all these centrally planned churches. Like Alberti, Filarete elevates his churches on a basement. He may have derived the portico on the façade from Alberti's treatise but Early Christian examples Filarete could have known in Rome or Tuscan churches such as those at Impruneta, Bosco ai Frati or old S. Lorenzo in Florence seem more probable as sources. The basic elements of Filarete's planning are all present in these modest little churches. The form itself provides infinite variations which he manipulates with greater and greater complexity as he progresses in the composition of his treatise.

The complexity inherent in the Cathedral of Sforzinda (Figs. 3–4) is due partly to the subdivisions of the basic form, but in greater part to a certain confusion in the text. The plan itself indicates a simple division of the square into 36 smaller squares—a variant on the tripartite division of the market church. The corner chapels occur as before but in a more complex form. A side aisle now intrudes between the chapels and the major volumes of the church and causes Filarete a great deal of difficulty in his over-all organization of the spaces. Although the problem of Sforzinda Cathedral is too complex to take up here, it can be sketched in general terms. Filarete began the cathedral on the model of S. Marco in Venice but with greater emphasis on the square. At one point the treatise indicates the intention of suppressing all the peripheral squares but the chapels which now stand free. At another point the height of the vaults is altered to conform to a new set of dimensions. As a result the textual description of Sforzinda Cathedral is based on two different plans and two different sets of dimensions which are not combined with any degree of order. The original intention of relating the interior and exterior as well as the major and minor spaces loses coherency and can only be understood on the basis of a shift in concept. One could probably say that Filarete is too closely tied to his model in the Cathedral of Sforzinda to create an original and coherent organization.

With the church for a Benedictine monastery (Figs. 5–7), however, Filarete is completely liberated from reliance on any particular architectural model. The church itself is quite unusual. Central-plan churches are rare enough in the fifteenth century, but a central-plan church for a monastery is even rarer. Within the treatise it is the only Greek cross structure in a group of five monastic foundations, and one of the few buildings where a hemispherical dome is clearly indicated. The drawing accompanying the treatise (Fig. 5) indicates the major elements of the plan and the relation of the building to the remainder of the monastery. The porticoed atrium could well relate to Early Christian examples, while the porticoes that surround the church on three sides seem to be derived from the rarely heeded advice in Alberti's treatise on architecture. The text makes it quite clear that we are not to read this plan as a trilobed church. It has only one apse and the major volumes are covered by barrel vaults. Information from the text is complete enough that it is possible to translate the fifteenth-century drawing into modern terms (Fig. 6). Superficially it resembles well known types from the Near East. Although influence by way of Ciriaco d'Ancona, whom Filarete could have known in Rome in the 1440's, cannot be entirely ruled out, it is more probable that the final composition is caused by the choice of the square and the method of subdividing it into thirds. The church itself is one hundred *braccia* square. The walls serve apparently to reduce the dimensions of the interior spaces to whole numbers. They also aid in relating the chapels along the nave to each other, to the piers under the dome, and to the "secret sacristies" under the campanile. Filarete encounters here the same problem that confronted later architects of central-plan churches with the location of the altar. He avoids it in exactly the same manner as his successors by placing one altar under the dome to satisfy esthetic demands and another in the apse to satisfy the traditional demands of the liturgy. Although the apse destroys the perfect symmetry of the church, Filarete avoids the difficulty by converting the flanking spaces into sacristies with openings similar to those of the chapels. His plan, then, relies basically on a simple geometry which is altered to suit the exigencies of liturgy and structure.

Although the treatise does not include—and probably did not intend to include—an elevation of the Benedictine church, it is possible to reconstruct one from the dimensions provided by the text. The churches of the treatise are generally as tall as they are wide. The arms of the cross are quite clearly stated as 36 *braccia* wide by 30 long. Since the dimensions of the side chapels are clearly related to those of the nave, it is quite possible that Filarete intended to use the proportions of 2:3 throughout. These proportions occur in the chapels and would probably continue to

the chapel openings and the nave. The nave would then be 54 *braccia* tall with a drum 24 *braccia* high covered by a hemispherical dome an additional 18 *braccia* over the crossing, bringing the total to a height of 100 *braccia* with the thickness of the vaults. A section across the façade (right half of Fig. 7) reveals towers drawn precisely to Filarete's dimensions, chapels isolated from the nave by a thick wall, and a large unified nave space not unlike the one planned later by Alberti for Sant'Andrea in Mantua. A longitudinal section (left half of Fig. 7) underscores the strong murality of Filarete's planned interiors. The smallness of the chapel openings and the great emphasis on the massive piers and unbroken wall would seem to suggest influence from Romanesque architecture. The importance of this reconstruction—and the redrawing of the plan—does not lie in the resolving of difficulties created by the text and the illustrations but rather in a clearer understanding of the sort of architecture proposed. In these projects he indicates his ability to control the elements of the plan and to arrange them in an interesting manner. He has done little, however, with the façade or with the massing of these elements in a three-dimensional composition. At this point in the treatise Filarete takes up the variant solution—a quadripartite division of the square—and with it seems suddenly to realize the sculptural capabilities of the form.

The hospital church (Figs. 8–9) is the first example in which Filarete investigates the possibilities of the square divided by fourths. The 16-square plan is not particularly exciting in itself with its small isolated chapels and overemphasized central space. However, it does stress the importance of the dome which would, in such a plan, dominate the whole composition and the cubical base from which it springs. In this respect it approaches Alberti's proposed organization for S. Francesco at Rimini where the dome form was intended to control the cube of an "ideal" crossing. On the exterior, however (Fig. 9), Filarete betrays his desire to treat the rather planar façade of his earlier compositions in a more sculptural manner. His final decision is not quite clear, but it would appear that he has either doubled the forward spaces in order to bring the towers forward or he has removed the space intervening. Like the market church, this plan is of importance to Filarete primarily as a key to a whole new series of variations on a very flexible form.

The visual impact of the dome leads Filarete into a project for the Temple of Plusiapolis which probably would have been quite unstable had it been built.[4] Like its successor, Plusiapolis II, the church is elevated 15 *braccia* above ground level by a porticoed crypt. Alberti's influence seems to be strongly indicated here. A porticoed basement for a church is suggested in the *De re aedificatoria* and appears as well at S. Sebastiano in Mantua. I need not go into a long discussion of the amicable relations between the Gonzagas and the Sforzas to demonstrate the possibility of an exchange between the artists of the two courts. It is enough to cite Filarete's respectful mention of Alberti's treatise and his reference to him in the three books on drawing as "el mio Baptista." The dates coincide as well since the model of S. Sebastiano was finished by February 27, 1450, and the portico of the crypt completed by 1463.[5] This section of Filarete's treatise, as I have already indicated, was probably written toward the latter half of 1462.[6] The façade of this church is derived from the façade of the Cathedral of Bergamo which in turn is related to Alberti's S. Francesco in Rimini. The derivative elements of this project, however, assume lesser importance in its overall visual impact. The square of 100 *braccia* is divided into 16 smaller squares (Fig. 10). The ratio between major and minor spaces of the linear drawing is maintained by erecting the walls inside the lines to create chapels 22 *braccia* square and a central square of 44 *braccia*. The text disagrees with the plan by stating that the chapels are to be octagonal with niches introduced into the spaces this figure excludes (Fig. 11). The elevation (Fig. 12) alters both the form and the dimensions of the campanili, although it is probably roughly correct in the over-all height of the church and in the relation of the drum and dome to the nave. By removing sections of the arms of the cross, Filarete allows the octagonal towers to stand forward of the basic cube of the church, yet the cube does not lose its importance. It becomes instead the visual core of the church and its function is even more clearly stated when it serves as the support of a large and swelling dome. The first Temple of Plusiapolis seems to open new concepts for Filarete. He begins to treat the masses in a more sculptural manner and he begins to place greater emphasis on the visual impact of the dome. When he combines these characteristics of the four-part plan with the interior richness and control of the three-part plans, he creates a project unusual in its own variety and complexity and which already marks out the direction which Leonardo and Bramante were to follow.

This project is the second temple for Plusiapolis (Figs. 13–15), the plan of an antique temple engraved on the gold leaves of a book unearthed at the new port city. According to the fiction of the *Golden Book*, the venerable architect of this ancient structure is one Onitoan Nolivera—a thin disguise for Antonio Averlino. The complexity of this plan (Fig. 13) lies both in the forms employed and in the points which Filarete does not clarify. The porticoed crypt seems to be derived from the preceding plan and has little to do with the church erected above it. The church itself is 120 *braccia* square and divided into nine smaller squares. The corner squares are reduced to 30 *braccia* and octagons are inscribed within them. The squares on the major axes are thus converted into rectangles 30 by 40 *braccia* while the central square remains 40 *braccia* on a side. As a result

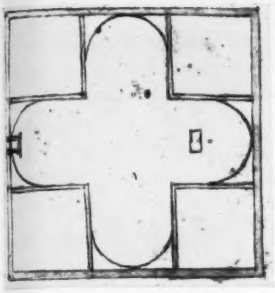

Fig. 1. Plan of a market church. (Cod. Magl., fol. 76v. Original drawing 6.7 x 6.7 cm.)

Fig. 2. Elevation of market church. (Cod. Magl., fol. 73v. 5 x 6 cm.)

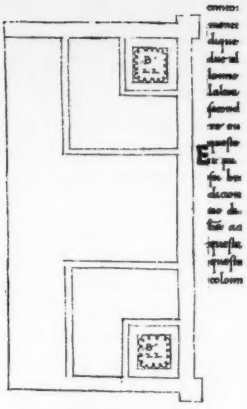

Fig. 3. Partial plan of the Cathedral of Sforzinda. (Cod. Magl., fol. 49v. 7.5 x 15 cm.)

Fig. 4. Elevation of the Cathedral of Sforzinda. (Cod. Magl., fol. 47r. 9.5 x 13 cm.)

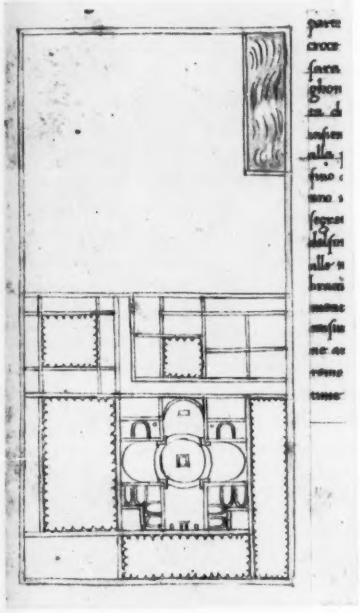

Fig. 5. Plan of a Benedictine monastery. (Cod. Magl., fol. 78v. 8 x 16 cm.)

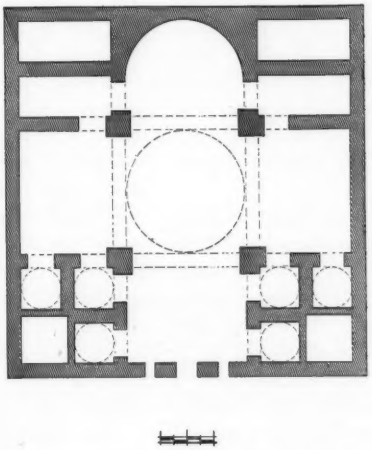

Fig. 6. Redrawn plan of the Benedictine monastery.

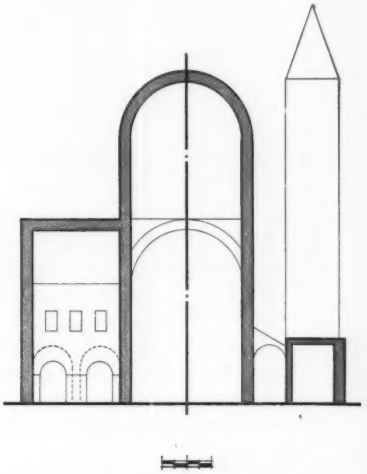

Fig. 7. Reconstruction section of Benedictine monastery. Right half to read as a section across the façade. Left half to read as longitudinal section along the nave.

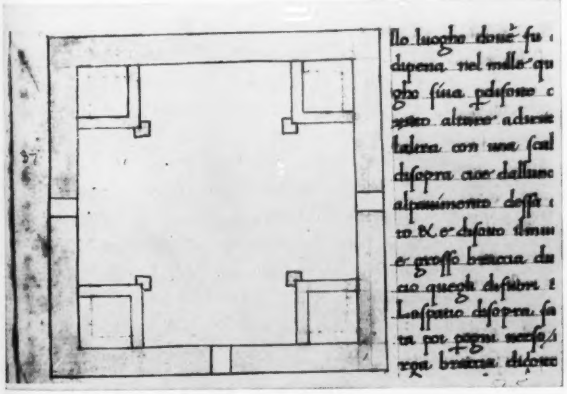

Fig. 8. Plan of the hospital church. (Cod. Magl., fol. 81v. 8 x 8 cm.)

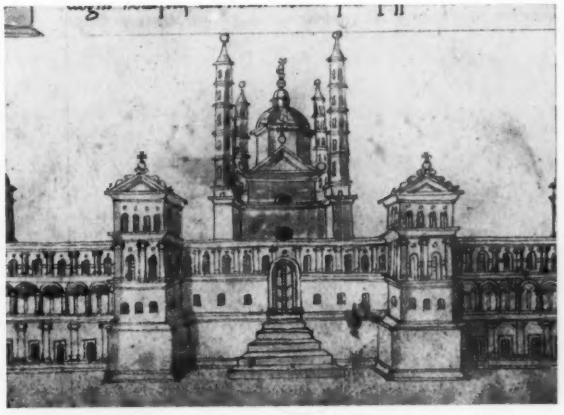

Fig. 9. Detail from a view of the hospital. (Cod. Magl., fol. 83v. 8 x 27.5 cm.)

there are spaces left over between the central and corner octagons which Filarete calls "cloisters to receive light."

From this résumé of the text it seems impossible to derive the illustrative figure of the manuscript. If one begins to construct this plan with the use of squared paper as Filarete did, its evolution becomes more evident (Fig. 14). He invariably begins his description of a plan with "first I lay out our grid of *braccia*." The rectangles of the perimeter are first subdivided into thirds. Thus each corner square contains nine smaller squares repeating the major organization. The diagonals of these smaller squares can be used to construct a fairly regular octagon. It would be possible to determine the shape of the ocatagon over the crossing by this same method, but this drawing and several of Leonardo's indicate an alternate procedure. This "short-cut method" remains in the unusual shapes joining the "cloisters to receive light" with the corner octagons. By means of the grid an isosceles right triangle is erected on the one-third division lines. The hypotenuse of such figures, if extended, will form parallels which cut the central square to indicate the sides of the octagonal covering. "The cloisters to receive light" are then the remnants of these constructional parallels. Although the method seems unnecessarily complicated and does not provide accurate measurements, it does permit rapid and simple distribution of the interior volumes.

On the exterior (Fig. 15) Filarete again begins to pare away superfluous spaces. The rather pointless busy little areas surrounding the corner octagons are removed to free that form on the exterior while the cruciform shape of the arms of the cross is altered to conform to the new concept of the façade. As in Plusiapolis I the emphasis on the basic cube is maintained, but the planes of that cube are livened by the projecting mass of the naves and the chapels which now begin to move out into the surrounding space and to give it form. Although the dome cannot have the same importance here as it had in the quadripartite plans, it is still the dominant element which organizes and unifies the whole composition. Filarete's approach to the three-dimensional treatment of a building can be compared to the art of the *Holzschneider*. His façades read much like a woodcut. He begins with a plane and cuts into the mass to create a new plane from which the visually important elements stand out. To continue the comparison, Alberti behaves more like an engraver who cuts his dominant elements into the plane. It is this difference between Filarete and architects such as Alberti or Brunelleschi which underscores a new and vital approach to architecture for the fifteenth century. Full exploitation of the ideas already expressed here in germ did not occur until the Baroque period, yet the project of Plusiapolis II seems to have had an immediate effect.

Although it is perhaps presumptuous to attempt to establish Filarete's influence on two of the greatest artists of the Renaissance, there are certain clear-cut parallels between Plusiapolis II and the architectural plans of Leonardo da Vinci and Bramante. Although Leonardo da Vinci does not mention Filarete once by name in his extant writings, it seems more than coincidental that he did not begin to conceive central-plan churches until his arrival in Milan. One such building (Fig. 16) even seems to follow the method used by Filarete in Plusiapolis II. Both begin with the square subdivided into thirds, both use the same system of further subdivision and parallels to create the central and peripheral octagonal shapes and both connect these octagons by "cloisters to receive light." On the exterior Leonardo's church employs the same elements which we have come to regard as characteristic of Filarete's design—cubic core surmounted by an octagonal dome on a high drum, corner chapels covered by tall campanili and a plastically treated exterior. Heydenreich has referred to Leonardo's early "divisive" and his later "additive" plans.[7] The same terms can be applied to Filarete, for the first step in his linear plan is essentially "divisive" while the treatment of the façade is quite "additive." Actually both men were aware, as was the fifteenth century in general, that a geometric form can be not only divided internally, but it is also capable of growing organically by its own extensions. Although the same method and the same elements that we have found in Filarete's treatise do occur with regular frequency in Leonardo's notebooks, this does not necessarily indicate direct influence. Until more direct proofs are marshalled, it may be safer to assume that both men created similar forms in response to the challenge of the dome of Milan Cathedral in particular and of Renaissance drives toward centrality and unity in general by the use of the same method and by a common debt to similar architectural models.

With Bramante the possibility of influence is equally tempting and equally uncertain, although there is perhaps a greater opportunity for artistic contact. While in Bergamo, Bramante would certainly have known Filarete's cathedral as it existed before renovation. In Milan he made drawings of the Ospedale Maggiore at the request of the Venetian government.[8] Although his knowledge of the treatise can never be measured and must remain dubious if we accept Cesariani's characterization of him as an unlettered person, the fact remains that Bramante had personal contact with Filarete's architecture and may have been introduced in Milan to the work of one of his predecessors at the court. His plans for St. Peter's (Fig. 17) seem to represent a further refinement on the plan of Plusiapolis II. The same elements occur, although Bramante has allowed an additional ring of geometric forms to intrude between the exterior ring and the central core in a manner reminiscent of the Cathedral of Sforzinda. Reconstructions of a geometric method of planning are always somewhat dubious, but it would appear

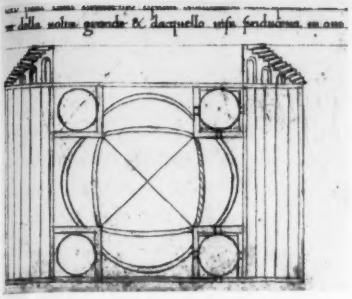

Fig. 10. Plan of Plusiapolis I. (Cod. Magl., fol. 119v. 10.5 x 8 cm.)

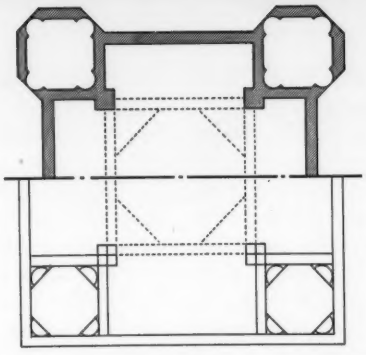

Fig. 11. Redrawn plan of Plusiapolis I. Lower half reconstructed according to text. Upper half adjusted to conform to elevation drawing.

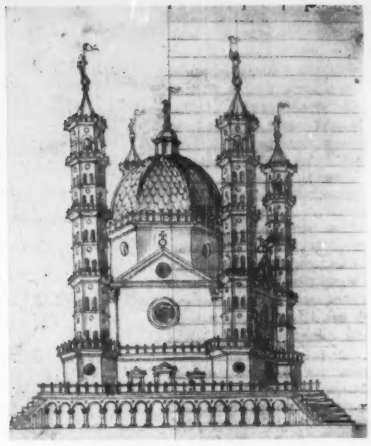

Fig. 12. Elevation of Plusiapolis I. (Cod. Magl., fol. 119v. 13 x 14 cm.)

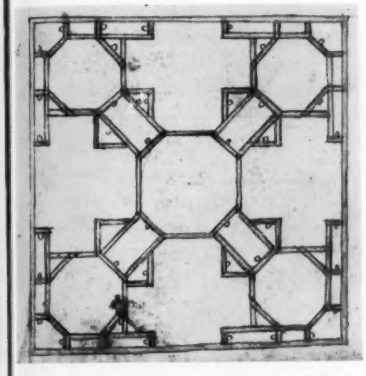

Fig. 13. Plan of Plusiapolis II. (Cod. Magl., fol. 108r. 8 x 8 cm.)

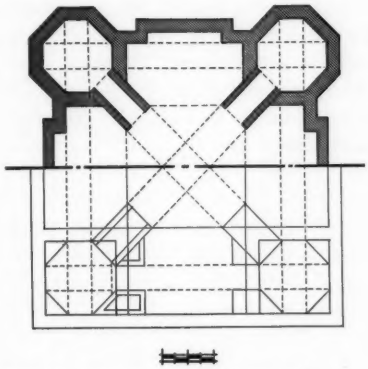

Fig. 14. Redrawn plan of Plusiapolis II. Lower half reconstructed according to text showing method. Upper half adjusted to conform to elevation drawing.

Fig. 15. Elevation of Plusiapolis II. (Cod. Magl., fol. 108r. 14 x 12 cm.)

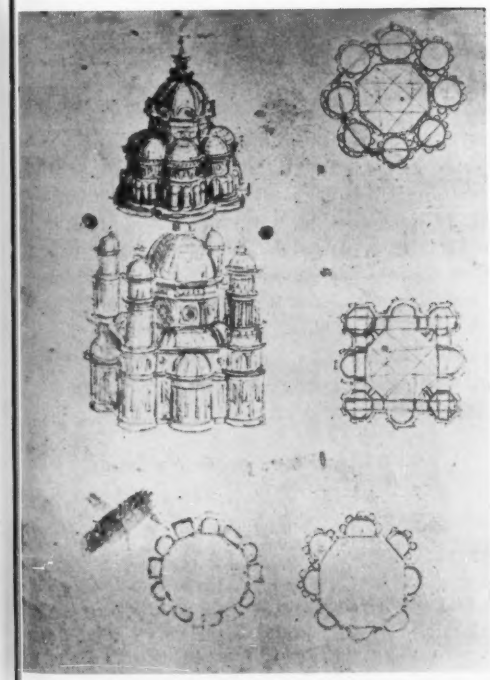

Fig. 16. Leonardo da Vinci, drawings. (Codex B, fol. 25v. After Ravaisson-Mollien, *Les Manuscrits*, Vol. 2)

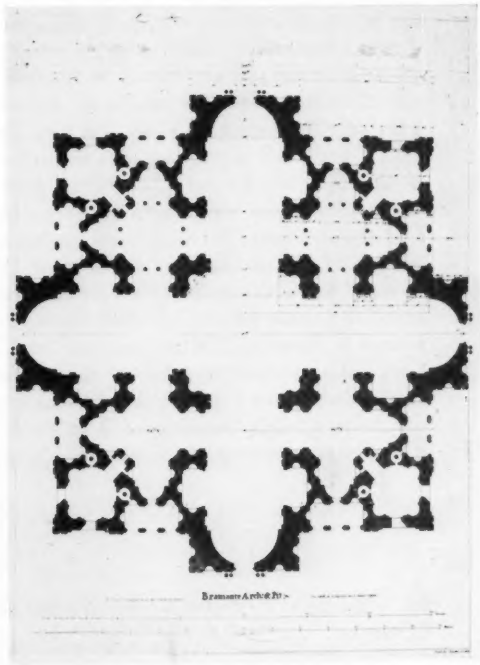

Fig. 17. Bramante, reconstructed plan of St. Peter's from Uffizi 1. (After Geymüller, *Sanct Peter in Rom*, Pl. 4)

that Filarete's one-third division was used here to determine the linear organization of the volumes, and, as in Filarete's designs, walls were placed astride these lines to create commensurable volumes. On the exterior (Fig. 18) Filarete's influence seems equally strong. Here again is the same emphasis on the cube and its dome, on the projection of the naves, and on a composition concluded by projecting corner towers. It could almost be a combination of the façades of Plusiapolis I and II. The basic concept of raising one antique building upon another—in this case the Pantheon atop the Basilica of Constantine—had already been voiced by Filarete's Temple of Virtù, which combines the tomb of Hadrian with the domes of the Pantheon and of S. Lorenzo in Milan. It may be argued that in Milan Bramante lacked only an acquaintance with Rome in order to possess the same architectural knowledge as Filarete. Once this knowledge was complete, he too was able to create central-plan churches without reliance on the text of the treatise. This possibility cannot be completely ruled out, although there are more and more indications that Bramante had been in Rome prior to his Milanese experience. In any case we must deal primarily with imponderables and conjectures in attempting to discover Filarete's influence on two important artists of the High Renaissance. At the same time the appearance in their work after a stay in Milan of motives, concepts and a mode of planning that had occurred twenty to fifty years earlier in Filarete's treatise might warrant the broadening of Heydenreich's conclusion "Leonardo, Bramante and the central-plan church" to include Filarete.

The "Temple of Virtù," an Excursus

One of the most imposing structures in Filarete's treatise is not, strictly speaking, a central-plan church, although it is so closely related to his projects for ecclesiastical architecture and so unusual in itself that it merits special consideration. The treatise is illustrated only by a plan for the Temple of Virtù. The text, however, provides a detailed description accurate almost to the *braccio*. In plan (Fig. 19) a square 200 *braccia* is laid out as the major substructure with towers 25 *braccia* square on its four angles. Twenty-five *braccia* are subtracted from the interior of the perimeter to create what Filarete calls "bands." Within this square of 150 *braccia* an annular passage five *braccia* wide is inscribed, leaving a circle 140 *braccia* in diameter. The text continues with dimensions from which an elevation (Fig. 20) can be reconstructed. The circle becomes a drum rising 70 *braccia* where it is covered by a hemispherical dome. Atop the dome there is a hemispherical lantern on columns which in turn supports the "titular saints," Mars, Mercury, Phoebus and Minerva, for the Temple of Virtù is dedicated to "intellect, arms, wisdom and grace." On the interior the drum is composed of three orders of Persians supporting arches. Two orders of Persians on the exterior are related to the upper two of the interior, although it is not made clear whether the drum is pierced or not. On the corners towers rise from the base to an unstated height; arches spring from these towers to meet the thrust of the dome. Such a structure is without precedent in fifteenth-century architecture and seems to look forward to the projects of Boulée and Lequeu.[9] Actually it is wholly of the fifteenth century in concept.

The major features of the design—dome, drum, base and buttressing towers—indicate the sources which Filarete combined in this imposing structure. The hemispherical dome must certainly be descended from the Pantheon since it is to be stepped on the exterior so that "a hundred thousand men could stand there on a feast day." Although the hemispherical dome of San Lorenzo in Milan was somewhat masked by its exterior covering in Filarete's day, it did have the domed lantern required by this temple. Late fifteenth- and early sixteenth-century paintings and drawings of San Lorenzo indicate Romanesque towers rising to the springing of the dome to which they are joined by a type of "flying buttress" (Fig. 21). It had as well a double rank of open arcades around the drum like the Temple of Virtù. The choice of this particular structure is quite relevant for the forms Filarete created. In the fifteenth century the earlier tradition which attributed the church to Galla Placidia had been completely forgotten to make of it a Roman temple to Hercules or occasionally to Mercury. By combining the domes of the Pantheon and S. Lorenzo, Filarete insures for his foundation *pietas* for all the gods plus the *virtus* of Hercules.[10] The cylinder of Filarete's temple occurs in the Pantheon, however its combination with a rectangular base is found primarily in Roman tombs and especially in the tomb of Hadrian. The one large central door and the great length of the rectangle in relation to its height are strongly reminiscent of the Castel Sant'Angelo as it appears in drawings of the latter part of the fifteenth century (Fig. 22). In effect, then, he has combined the tomb of "Trajan the Just" and of "Hadrian the Wise" with the temples to all the gods and to the demi-god of *virtus*. A half-century before Bramante proposed to pile the Pantheon atop the Basilica of Constantine, Filarete had anticipated him in this Temple of Virtù (Fig. 23).

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FIG. 18. Attributed to Caradosso, Foundation Medal of St. Peter's. (After Hill, *Corpus*)

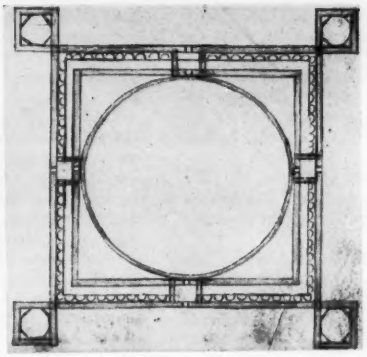

FIG. 19. Plan of Temple of Virtù. (Cod. Magl., fol. 149r. 9 x 9 cm.)

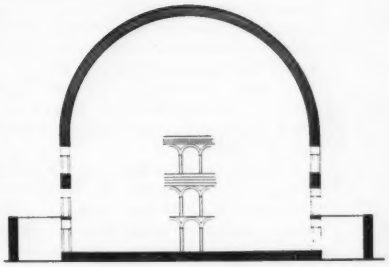

FIG. 20. Reconstruction section of Temple of Virtù.

FIG. 21. Tristano Calco, drawing of S. Lorenzo. (After A. Calderini, *La Basilica di S. Lorenzo Maggiore in Milano* [Milan, 1951], Fig. LX)

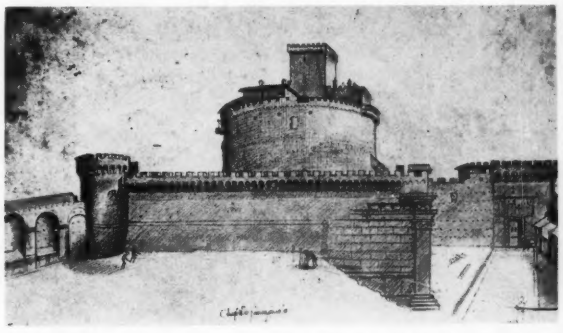

FIG. 22. Castel Sant'Angelo. (From H. Egger, *Codex Escurialensis* [Vienna, 1905], Pl. 30v.)

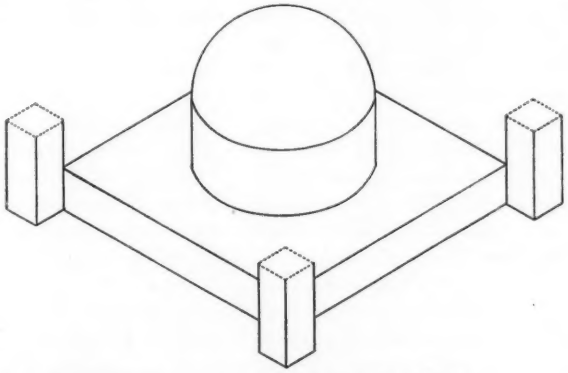

FIG. 23. Perspective reconstruction of the Temple of Virtù.

The researches from which grows this brief *aperçu* of Filarete's central-plan architecture were made possible by grants from the Morse Fellowship Committee of Yale University, the Fulbright Commission and the American Philosophical Society. The photographs of the Magliabecchiana manuscript were made for me by G. B. Pineider of Florence with the exception of Figs. 9, 12 and 15 by Brogi. I am especially indebted to E. G. Close for his skill in turning my rough sketches into architectural drawings.

1. For Filarete's effect on his successors see particularly Cesariani's Vitruvius where Filarete's hospital is singled out from the many examples Cesariani could have known. Fausto Franco's article ("L'interpolazione del Filarete trattista fra gli artefici del Rinascimento architettonico a Venezia," in *Atti del IV Convegno nazionale di storia dell'architettura* [1939]), although perhaps too ambitious, indicates the impact of Filarete's theoretical architecture on the following generation in Venice.

G. Vasari, *Vite*, ed. G. Milanesi (Florence, 1878), II, 453, 457, characterizes the doors of St. Peter's as "unfortunate." The treatise contains "certain good things, but it is on the whole ridiculous and full of foolishness."

Apologies to the reader can be found particularly in the only monograph on Filarete—M. Lazzaroni and A. Muñoz, *Filarete scultore e architetto del secolo XV* (Rome, 1908)—and in Mario Salmi, "Antonio Averlino detto il Filarete e l'architettura lombarda del primo Rinascimento," in *Atti del I° Congresso nazionale di storia dell'architettura*, 1936.

2. Filarete (Antonio Averlino), *Tractat über die Baukunst*, ed. Wolfgang von Oettingen, in A. Ilg, *Quellenschriften für Kunstgeschichte und Kunsttechnik*, New series, Vol. III (Vienna, 1890).

3. The following descriptions and reconstructions of Filarete's theoretical architecture are based on the text and illustrations of the best extant version—Bib. Naz., Florence, MS Magl. II, I, 140—presented to Piero de' Medici. Dubious passages have been referred to the Latin translation prepared for Matheus Corvinus in 1489—Venice, Bib. S. Marco, cl. VIII, n. 11—although the illustrations for this manuscript follow the Magliabecchiana closely and the text omits difficult passages. Some 30 photographs made in the 1930's from the illustrations of Valencia 975 by Archivio Mas, Barcelona, before the disappearance of the Valencia MS, were used for the façades of Plusiapolis I and II. The differences are primarily those of proportion.

4. I here reverse Filarete's order of presentation for the two temples of Plusiapolis. My number I is actually treated after my number II in the treatise, but it is so much simpler and so much more closely related to the hospital church, which immediately precedes it in the treatise, that I believe it is actually the earlier plan.

5. W. Braghirolli, "Leon Battista Alberti a Mantova, documenti e notizie inedite," in *Archivio storico italiano*, Series 3, IX (1869), Part I, 3–31.

6. *Rivista d' Arte*, XXXI (1956), 93–103. In this article I attempted to bring greater precision to the dates 1460–65 generally accepted for the composition of Filarete's treatise. May, 1461, is indicated as a *terminus post* by reference to the death of Domenico Veneziano. A *terminus ante* for the bulk of the treatise, excluding the three final books on drawing and the book on Medici buildings, can be established in late 1462 or early 1463 by the laying of the cornerstone of S. Sigismondo in Cremona (for which Filarete presents a rejected plan in his treatise), by a trip into the mountains with Aristotile da Bologna, and by the events leading up to the tacit cancellation of the engagement between Dorotea Gonzaga and Galeazzo Maria Sforza.

7. L. H. Heydenreich, *Die Sakralbau-Studien Leonardo da Vincis* (Leipzig, 1929), pp. 81–83.

8. Giacomo C. Bascapè, "Il progresso dell'Assistenza ospedaliera nel secolo XV e gli ospedali a crociera'," in *Tecnica ospedaliera*, fasc. I, 1936, p. 14. I am particularly indebted to Dr. Bascapè, archivist of the Ospedale Maggiore, for his encouragement and assistance in my researches on Filarete.

9. There is no way Emil Kaufmann could have known the appearance of the Temple of Virtù. None of the manuscripts contains an illustration of it and I did not find a reconstruction of it in his notes. Still the building more than any other seems to provide a "psychic link" between his studies of the three revolutionary architects and the work he had only begun on Filarete.

10. Erwin Panofsky, *Hercules am Scheidewege* (Kulturwissenschaftliche Bibliothek Warburg, Hamburg. Studien. [Heft] 18. [Leipzig, 1930]). See particularly Exkurs III where Panofsky discusses the House of Virtù but not the temple and the symbols of Virtue and Vice.

SHEPLEY, BULFINCH, RICHARDSON & ABBOTT, ARCHITECTS; AN INTRODUCTION

J. D. FORBES

SHEPLEY, BULFINCH, Richardson & Abbott, architects,[1] of Boston and their predecessor firms [2] reveal in their work all of the main currents of architecture in the United States of the past three-quarters of a century. More than that, they acquitted themselves with relative credit during that architecturally uninspired period in this country from their establishment in 1886 until about 1930, and since that time they have designed a number of buildings of genuine distinction.

In its internal organization this office developed the system of committee rather than one-man domination and presents a united front to the public, preserving the anonymity of specific designs.

THE RICHARDSON HERITAGE

Henry Hobson Richardson [3] returned from his studies at the Ecole des Beaux-Arts in Paris at the close of the American Civil War with his vision of a bold and vigorous architectural style which would express the virility of a young nation and recapture the spirit of several robust architectural periods in European history. He combined in varying proportions in a bold and original way the massive, round-arched Romanesque of Auvergne and Aquitaine, the steep-roofed and turreted transitional Early French Renaissance of the Loire Valley, and the deeply-incised decorative stonework of Byzantium.

Although a Southerner, Richardson opened an office in New York and in 1878 moved to Boston to establish a firm which has always been associated with that place.

Richardson did more than prosper. He became a major figure in the architectural history of this country. Like other giants he had his strengths and weaknesses. Where he was once maligned and under-rated, he has within the past twenty years been almost deified and is currently worshipped uncritically by a considerable following.

He built with vigor and at times with grandeur.

He built with imagination and with an excellence in proportion and directness and strength at a time when the revivals and resuscitations of the Romantic Movement had lost their direction and earlier conviction and were floundering about.

On the other hand, he built menace and gloom into his buildings; the cavernous doorways, deep reveals, masses of masonry, subdue if they do not crush the spirit of the beholder. Nor can the grim works of his imitators be shrugged off with the comment that the copyists could not bend the master's bow. He must take the sole responsibility for a generation of Richardsonesque building.

His brown interiors, so often praised for their modern concept of "flowing space" in actual fact yielded vast halls that must have been perfect caves of the winds in cold weather with draughts whistling down stairways and out of rooms whose doorways had been enlarged to the point where privacy and shelter were threatened.

He did not put an end to eclectic borrowing but added two illogical revivals to the already long list of Romantic exhumations, Byzanto-Romanesque and the transitional Francis I.

Richardson died on April 27, 1886, at the height of his reputation as an architect. His office in Boston was left with some twenty-five projects in hand,[4] commissions in various stages of completion and negotiations ripening into commissions. His unexpected death at the age of 47 might have struck a mortal blow to as personal a practice as his, but a group of his associates rallied and formed a new firm to carry through the unfinished business.

The successor firm took the name of Shepley, Rutan & Coolidge. Head of the new partnership was George Foster Shepley (1858–1903). Shepley came from St. Louis where he had graduated from Washington University in 1880. He had come to Boston to study at Massachusetts Institute of Technology and gone into Richardson's office after a tour of duty with Ware & Van Brunt. Shepley married Richardson's daughter Julia shortly after her father's death and the firm became the family concern which it has remained in varying degrees ever since.

Associated with Shepley was Charles Allerton Coolidge (1858–1936), a Bostonian and graduate of Harvard Col-

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lege (1881) with subsequent study at Massachusetts Institute of Technology and also some experience with Ware & Van Brunt. Coolidge married Shepley's sister in 1889 and further tightened the family ties of the firm.

Oldest of the three partners was Charles Hercules Rutan (1851–1914), the engineer, a member of the Richardson organization since 1869 when he was engaged as office boy.

The first task faced by the new firm was to complete the Richardson commitments. These fell into three principal groups in diminishing closeness of connection with the founder: (1) Buildings already under construction according to designs by Richardson; (2) Buildings designed to a greater or less degree by the older man but barely begun, if started at all; (3) Buildings commissioned during Richardson's lifetime but bearing little or no evidence of his personal stamp.

Foremost in the first category were the Allegheny County group in Pittsburgh, the monumental civic center commissioned in 1884, and the Marshall Field Wholesale Store in Chicago commissioned in 1885. Other important work in progress included the competition-winning Cincinnati Chamber of Commerce Building, the Glessner House in Chicago, the New London Northern Railroad Station, and the store building put up for J. H. Pray & Sons on Harrison Avenue in Boston by the F. L. Ames Estate, described by Hitchcock as "Richardson's last great work." [5]

The status of a number of these unfinished or unbuilt works is in doubt, but we know that the firm inherited commissions for the Armory Building in Detroit, the Warder House, Washington, the Franklin McVeagh House in Chicago, the J. R. Lionberger and Henry Potter Houses in St. Louis, and the fortress-like W. H. Gratwick House in Buffalo, to list the more important.

The transition from Richardson's strong personal style to a modified Richardsonian was natural for the firm, although they were no better at designing in the Richardson manner than the numerous other Richardson imitators who sprang up—for all their having been brought up in his office. An example of the firm's failure to comprehend the master's approach is seen in their execution of the Cincinnati Chamber of Commerce Building from plans drawn by Richardson. The contrast between the vigor of the original with its deep window reveals and the meagerness of the completed building when these plans were translated into working drawings and then into masonry is striking.[6]

Shepley, Rutan & Coolidge continued to design in the inherited style throughout the late '80's and early '90's, even after they had worked through the backlog of jobs that came to them directly from negotiations begun during the founder's lifetime. But almost from the outset the firm's version of the Richardsonian mode revealed marked modifications. The mass was diminished; the walls were opened up with freer fenestration; the whole treatment was lighter. Symmetry was more consciously insisted upon and Richardson's old fondness for the mediaeval builder's imbalance was more and more disregarded. There was almost a historical reenacting of the transition from mediaeval to Renaissance ideas and forms. The most obvious innovation was the boldly jutting cornice of marked Italian antecedents which began to appear around the roofs of otherwise Richardsonesque buildings. Less frequent now were the areas of rich, deeply undercut foliage and tendrils, ornamented cushion capitals, and the polychromy of variegated stones.

Certain individual buildings from the firm's Richardsonesque phase stand out by virtue of various criteria, aesthetic merit, community importance, or even sheer bulk and cost. The Boston & Albany Railroad Station at Springfield, Massachusetts (Fig. 1), was the firm's first big job undertaken independently although the project had been discussed by Richardson and representatives of the road. The station was made up of several elements, a monumental overpass bridging a busy city street and a building in three blocks, the central section with a vast second-story waiting-room on the track level. The whole was treated in a Romanesque vocabulary with battered walls and heavy arches supporting a lighter superstructure. The waiting-room was a noble baronial hall with open, wooden truss-supported ceiling reinforced with tie-rods. Records of the firm give its cost at $625,000. It was completed in 1889.

The Albert W. Nickerson House, Dedham, Massachusetts—today occupied by the Noble and Greenough School—was built in this same period. It was a formidable masonry structure, the first of the firm's large private houses, with hexagonal corner towers, segmental-arched porches, and an imposing arched portal leading into a vaulted entrance-hall. The fenestration reminded Russell Sturgis of the Bargello in Florence.[7]

Some of the firm's most successful buildings were unpretentious private houses in wood. Hitchcock speaks of this [8] and Sturgis mentions particularly the G. W. Armstrong House on Beacon Street, Brookline, and the "simple charm in such naturally built and realistically designed houses as these." [9] These medium-sized private houses were usually shingled, often turreted and given interest by the addition of semi-circular, apse-like bays. Inside they were spacious with rooms flowing into each other through wide-arched openings, cool in summer, cooler in winter.

While these and lesser buildings were going up near at home, Shepley, Rutan & Coolidge were undertaking commissions in other parts of the country, in St. Louis, Chicago, New Orleans, San Francisco, and Pittsburgh.

St. Louis was a natural secondary focus for the firm. At the time of Richardson's death there were drawings for three St. Louis residences on the boards: the houses for J. R. Lionberger and for his son-in-law Henry Potter, and a small town house for Isaac Lionberger. George Shepley came from St. Louis and was related by marriage to the

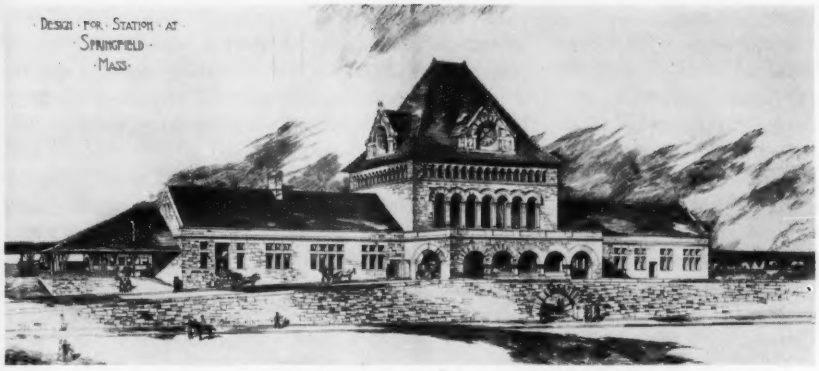


FIG. 1 Springfield, Mass. The Boston & Albany Railroad Station. Rendering.

FIG. 2 Pittsburgh, Pa. Shadyside Presbyterian Church. (Courtesy of James D. Van Trump, Pittsburgh)

FIG. 3 Palo Alto, California. Stanford University. Detail of arcade. (Courtesy Director of Information, Stanford University)

FIG. 4 Boston, Mass. The Ames Building. Rendering.

Lionberger family, and the combination of circumstances led to the opening of a branch office there.

A number of Richardsonian buildings were designed in St. Louis. While the Marshall Field Wholesale Store was being completed in Chicago a smaller version of it was erected in St. Louis, the Lionberger Warehouse, complete with rock-faced surface and great arched bays.

The year 1890 saw the completion of no fewer than six

buildings costing from $100,000 to $400,000 in St. Louis,[10] in addition to a house in Vandeventer Place for George Shepley's mother.

In 1897 the St. Louis office took into partnership the local office manager, John Lawrence Mauran. The office then became virtually autonomous under the separate firm name of Shepley, Rutan & Coolidge and John Lawrence Mauran. Three years later the last tie with Boston was broken and the St. Louis firm renamed Mauran, Russell & Garden. Present-day descendants are the firm of Russell, Mullgardt, Schwarz, Van Hoefen.

In New Orleans (where Richardson was born in 1838) the Howard Memorial Library was building. This building, completed in 1889, deviated little from the founder's library formula seen at Austin Law at the Harvard Law School and elsewhere. There was the cave-like arched doorway, the asymmetrical disposition of the façade with a turret on one side, the rough texturing. The interior showed the familiar use of the lofty, open ceiling with beam supports making a bold decorative pattern. Russell Sturgis felt that the Howard Library was "better than the New England buildings, because the southern sun had allowed a design with smaller windows and a much greater expanse of solid wall."[11] He forgot, however, the need for daylight in stack areas in the days before fluorescent lighting.

Two principal commissions followed closely after the Allegheny County buildings in Pittsburgh. These were Freemasons' Hall and the Shadyside Presbyterian Church. Lesser local assignments were three railroad stations in the suburbs and a remodelling job on the Henry Oliver House.

The Shadyside Presbyterian Church design submitted by Shepley, Rutan & Coolidge was judged the winner of a competition held in the summer and fall of 1888. The contract was let April 18, 1889, and the completed "edifice" dedicated Thursday evening, December 18, 1890. The firm was subsequently engaged to add a chapel a year or two later.

Shadyside (Fig. 2) is another Richardsonian Romanesque Revival building. On the outside it has all the familiar paraphernalia of massive round arches and rough, quarry-faced masonry. The mass builds up in a pyramidal composition that is quite monumental in so modest-sized a building. Here again, while Richardson's influence is marked, the weight is controlled and not overpowering.

On the interior the lantern tower which is the auditorium gives a most refreshing clerestory illumination and the pale color of the ashlar walls actually makes the room seem airy—the last word one would ordinarily think of applying to a Richardsonian church!

The central section of the church proper is a cube. Four minor wings make the auditorium cruciform. Great round arches bound the cube and support the tower walls. The whole is extraordinarily successful for use and to look at.

San Francisco and the adjacent Peninsula showed early indications of becoming an area of concentrated activity comparable to St. Louis, but after the completion of three important commissions, Stanford University, the Wells Fargo Company Building, and the Sharon Building, this far-western outpost was abandoned.

The master plan for Leland Stanford, Junior, University (1888) is one of the most significant projects in the firm's history. Not since the time of Ramée at Union College (1813) and Jefferson at Virginia (1819) had a college been designed in the United States to be built in its entirety from the ground up. In this case the donors, Senator and Mrs. Stanford, well-intentioned people with little understanding of higher education, set out to buy a memorial to their only son. They "hired" Shepley, Rutan & Coolidge to produce a complete layout in consultation with Frederick Law Olmsted, the landscape architect.

The resulting plan comprised a series of pavilions disposed around three courtyards centering on a chapel. Long rows of rhythmic arcades connected all of the buildings and created a cloister effect in the courtyards. The chapel somewhat resembled the Shadyside Church, Pittsburgh, but its three-arched façade as finally built suggested the influence of Richardson's Emmanuel Church in that city. The expanse of blank wall above the arches was left for a huge mosaic. This sparkling front was designed to be framed by a triumphal arch to form the focus of a vista on the main axis of the design.

The materials used at Stanford were yellow, rock-faced Indiana limestone and red mission tiles for the roofs. The style was Richardsonian with a strong Byzantine emphasis in the short columns and deeply cut decoration (Fig. 3).

Shepley, Rutan & Coolidge brought the skyscraper to Boston in 1889 when they designed the Ames Building, 1 Court Street (Fig. 4), for the F. L. Ames Estate. The Ames Building was a skyscraper in the sense that it was so tall (fourteen stories, 186 feet) as to be economically dependent upon the elevator and was, indeed, pointed out soon after its completion as a typical example of "American elevator architecture" in James Fergusson's *History of the Modern Styles of Architecture*.[12] It was not a skyscraper in the narrow Chicago School definition of possessing a metal skeleton. While iron beams supported the floors, they were, in turn, supported by outside bearing walls almost six feet thick at basement level.

Stylistically the Ames Building was a compromise between Richardsonian Romanesque and the increasingly favored Italian Renaissance Revival. It wore one of the first "hat brim" cornices, a detail which was to remain standard equipment on tall buildings in the United States down to the 1930's. The walls were battered for the first two stories to give the double effect of leading the eye upward and providing the building with an optically solid base.

As though to show their confidence in the practicality of tall, elevator-equipped office buildings, the architects moved into the top floor as soon as the building was ready for occupancy and they have remained there ever since.

The Ames Building was completed in 1892 at a cost of $708,000. The other big job finished in that same year was the Boston Chamber of Commerce Building. This was another Richardsonian pile but designed for a restricted site at the intersection of several streets so that a great apsidal curve took the place of a flat façade. Sturgis thought that this gave it "somewhat the air of the *chevet* of a French cathedral." [13] Loire Valley influence was combined with Italian Gothic as gabled dormers surmount bays of double-lighted arched windows.

The following year, 1893, saw the finishing up of a score of railroad stations and shelters on the suburban lines of the Boston & Albany Railroad, together with the $850,000 remodelling of the Union Station in Boston. The transitional, half-Romanesque, half-Italian Renaissance Montreal Board of Trade belongs to this same time.

The last important job in the Richardson tradition was the addition in 1894–95 of the West Porch to Richardson's own Trinity Church, Boston. This was an archaeologically accurate replica of the Provençal Romanesque church of St. Trophime at Arles. In keeping with mediaeval building practice, stone to be carved was hoisted into place and the sculpting done *in situ* by craftsmen on scaffolding.

But the partners had already expressed their impatience with Richardson's Romanesque beyond the stage of compromise. The unsuccessful competition design for the Rhode Island State House submitted in 1891 (Fig. 5) was pure High Renaissance in the grand manner of Bramante and Michelangelo, complete with dome.

It was impossible to abandon the still fashionable Richardsonian abruptly, but the firm branched out and designed in other styles with increasing freedom from this time onward.

THE MIDDLE PERIOD: ECLECTICISM

In forsaking the massive architecture of the founder, Shepley, Rutan & Coolidge turned to three historic styles and their work in these three dominates the middle period of the firm's history, roughly the forty years from 1894 to 1934. The styles are: (1) Italian High Renaissance—occasionally exhibiting so strongly the influence of its parent Roman style as to qualify as neo-classical; (2) Late English Gothic of the Tudor period; and (3) English Post-Renaissance of the Christopher Wren and succeeding Georgian period.

High Renaissance

The Renaissance Revival did not come suddenly. It gradually infiltrated the earlier, Richardsonian Romanesque designs of the firm, as we have seen.

The New York architects McKim, Mead & White, who got their start in the Richardson office, are so often identified with the High Renaissance Revival that it is particularly interesting to find Shepley, Rutan & Coolidge working in the style prior to the Chicago Columbian Exposition of 1893 and continuing to complete important commissions in it through the 1920's. The competition drawings for the Rhode Island State Capitol (1891) (Fig. 5) remained on paper; the first of the firm's important buildings in the newly rediscovered formal manner were the Boston Union Station, the Virginia Library for the McCormick Theological Seminary, Chicago, and Langdell Hall, the library and classroom building of the Harvard Law School, the two latter completed in 1895.

As originally conceived the Union Station provided a monumental welcoming entry-way for the traveller approaching Boston or, conversely, the gateway to a new adventure to the departing wayfarer. Or so the propylaean Euston Station of London of an earlier generation was interpreted. In any event, a Roman triumphal arch motif completely dominated the composition and subordinated a series of lesser archways with medallions in the spandrels. Behind this imposing front lay waiting rooms, concourse, and train platforms.

The Roman triumphal arch was used again in the Chestnut Hill pumping station of the metropolitan waterworks finished in 1900. This was a highly ornamented mass of Corinthian columns and heavy rustication.

A recurrence of the arch of triumph is found in the United States pavilion at the Paris Universal Exposition of 1900. An illustrated guide book noted, "The design is due to the American architect Mr. Coolidge and to the French architect M. Morin Goustiaux." [14] The joint authorship makes it impossible to assess the responsibility for this piece of typically exaggerated exposition architecture which made use of the entire repertory of Roman and High Renaissance motifs.

Both the Virginia Library and Langdell Hall were of that border-line design that approached the original Roman more closely than the derivative Renaissance without imitating any specific monument of either period.

The central unit of the Virginia Library was a temple-like pavilion with a tetrastyle portico and pediment crowned with acroteria. Severely chaste and symmetrical wings completed the composition. The whole was built of ashlar.

Langdell Hall was a dignified and austerely undecorated structure inside and out.

While these two buildings were under construction, Shepley, Rutan & Coolidge experienced a signal professional triumph. Their plans won first place in the important architectural competition for the Chicago Public Library.

Russell Sturgis writing in 1896 characterized the Chicago Public Library as, "The most important of these

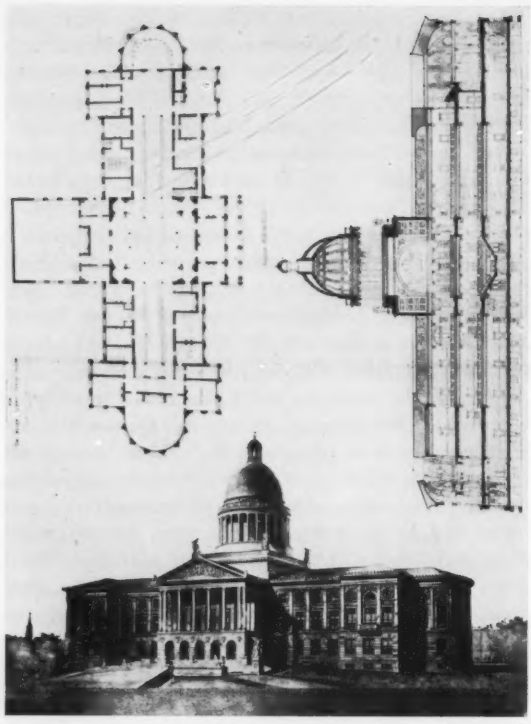
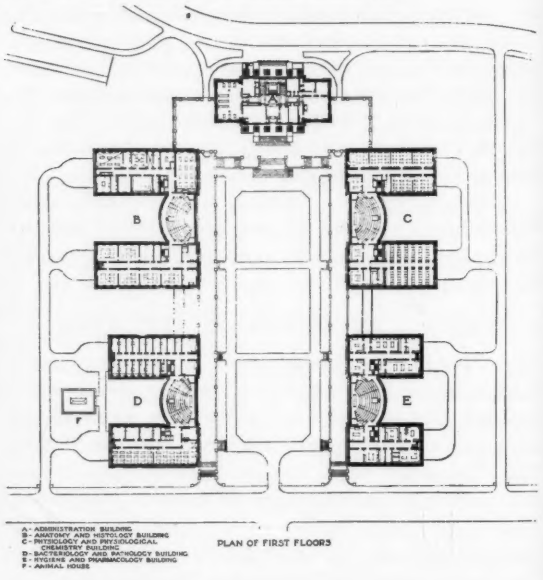


Fig. 5 Providence, Rhode Island. Competition drawing for the State House.

Fig. 6 Boston, Mass. Boston Safe Deposit and Trust Building.

Fig. 7 Boston, Mass. Harvard Medical School. View of the Court. (W. M. Rittase photo)

Fig. 8 Boston, Mass. Harvard Medical School. Plan.



Chicago buildings, the most important classical composition of the time and one of the best and most spirited known to us." He went on to amplify his judgment, "What is so admirable in it is the free use of the somewhat rigid classical details and classical systems of design in conformity with the requirements of the building." [15]

The exterior of the library made extensive use of round-arched Albertian windows. An Ionic colonnade was superimposed on the row of windows.

The interior was richly decorated with monumental stairs and marble veneered walls but the impression one receives today is of crowding and compression.

The Chicago Art Institute commission followed closely upon the Library prize award. It was a more generous composition, inside and out. It was helped by its open site on reclaimed land on the lake or eastern side of the library in downtown Chicago. Since the galleries on the second floor, the main exhibition area, were skylighted, the exterior design problem had to do with providing interest for a considerable expanse of blank wall. This was handled by the introduction of molding and panelling with triple-arcaded loggias marking the center of the façade and the ends.

The firm's success in securing the two important jobs within a short space of time caused violent repercussions among the already established Chicago architectural offices. There are still architects in Chicago who can recall the clamor and the chagrin and the gleefully malicious perversion of the firm name Shepley, Rutan & Coolidge to "Simply Rotten & Foolish" by the unsuccessful contestants.

In an effort to still this uproar and avoid the stigma of "carpet-bagging" the firm opened an office in Chicago and arranged to have one partner in residence full-time on a rotating basis from the home office. An even greater share of the Chicago business came to the firm in consequence.

The later history of the Chicago branch is similar to that of the St. Louis office. In 1914 Mr. Rutan died and in 1915 the firm name was changed to Coolidge & Shattuck with the elevation to partnership of George C. Shattuck. The following year the Chicago office was set up as a partnership separate from the Boston firm under the name of Coolidge & Hodgdon. The exact relationship between the two offices at this period is a matter of doubt. Mr. Coolidge withdrew from the Chicago partnership in 1930 and Charles Hodgdon and Son carried on until 1944 when the office was dissolved by agreement.

The classically inspired style continued to dominate the work of the Chicago office despite the mediaeval excursion of that branch's biggest single job, the University of Chicago. But the newly popular style was not neglected by the home office and soon came to dominate its work as well.

The year the Art Institute was completed, 1896, was also the year of completing the New South Building & Loan Association Building in New Orleans. This structure was given a terra-cotta façade ornamented with four fluted and banded engaged Ionic columns *in antis*.

In 1898 the St. Joseph County Courthouse, South Bend, Indiana, was put up in a similar vocabulary with a low dome. In the following year the South Station in Boston was completed for the Boston Terminal Company at a cost of a million and a quarter dollars. South Station was subsequently remodelled by the firm in 1912 so the present building differs somewhat from the earlier design.

The first third of the twentieth century was architecturally—or, more accurately, engineeringly—stimulating in the United States chiefly because of the perfection and extensive use in that period of steel-frame construction and the high-speed elevator. Shepley, Rutan & Coolidge, Coolidge & Shattuck (1915–1924), and their successor-firm, Coolidge, Shepley, Bulfinch & Abbott (1924–1952), and their Chicago associates designed and supervised the construction of a number of office buildings of skyscraper type embodying these new engineering developments. These buildings, almost without exception, had superficial decoration in the High Renaissance Revival manner.

The roster of these business blocks is impressive (the years are of completion): Barristers Hall, Boston (1901); Easton Building, Boston (1905); Boston Safe Deposit & Trust Co. (1910) (Fig. 6); John Hancock Insurance Building, Boston (1910); Borland Building, Chicago (1910); Corn Exchange Bank Building, Chicago (1912); Harris Trust Building, Chicago (1912); Merchants National Bank, Boston (1913 and 1922); Lawyers' Building, Boston (1923); Boston Insurance Exchange Building (1924); Old Colony Trust Co., Boston, Cornhill Addition (1925); Samuel Appleton Building, Boston (1926); Washington Building Trust Bank and Office Building, Washington, D.C. (1927).

While these commercial buildings were in progress the firm continued to design institutional and other buildings in the Renaissance vocabulary. First among these was the Harvard Medical School group on Longwood Avenue in Boston (1907). This was a set of five buildings disposed in a U about a long, open-ended court (Figs. 7 and 8) in a manner which has suggested the Jefferson layout at the University of Virginia. Here again the Roman influence predominated. George Foster Shepley, Richardson's real heir as the designer in the office, died before the execution of his designs so the plan like a number of others has been erroneously attributed to Charles Allerton Coolidge.

The final important commission carried out in the Italianate style was the Lakeside Hospital in Cleveland (1927–31). Lakeside adjoined the firm's earlier Western Reserve Medical School buildings.

By this time the personnel of the firm had changed again with the admission in 1924 of Henry Richardson Shepley, the present senior partner, Francis Vaughan Bulfinch, the civil engineer, and Lewis B. Abbott. Coolidge, last of the original partners, died in 1936. His personal contacts and business instincts were of great value to the firm. In 1952 the Coolidge name was dropped and that of Joseph P. Richardson, a partner since 1950, was added.

Buildings that show classical influence without falling into the larger categories of the firm's work include such isolated designs as the neo-Greek First National Bank of Portland, Oregon (1916), the low-pitch tiled-roofed "Mediterranean" of the Pan-American Exposition buildings at Buffalo in 1901, and the quite literal copying of an Early Italian Renaissance town hall at the Cambridge (Mass.) Gas Light Co. of 1913.

Tudor

Among the firm's earliest Tudor Gothic buildings were the (second) Joseph H. White House in Brookline, Massachusetts, and "Auldwood," the J. C. Hoagland country place at Seabright, New Jersey, both finished in 1894. The former was of brick and revealed a minimum of archaeological interest beyond a few flat-pointed arches and some gables. The Hoagland house was half-timber, or, more accurately, an early example of that simulated half-timber which has since become so popular with much less expensive houses. The Hoagland estate with two principal houses, barns, cottage, etc., cost about a quarter of a million dollars to build.

An early use of the Tudor style for larger buildings is found at the Belknap Building, men's dormitory at the McLean psychiatric hospital, Waverley, Massachusetts, completed a year after the two residences. Belknap was L-shaped and the informal asymmetry of the late mediaeval manner gave it a pleasantly un-institutional look.

Throughout most of the present century prior to United States entry into the first World War, and again throughout the late 1920's, the firm and later its Chicago affiliate was engaged in building The University of Chicago in the Tudor Gothic manner.

The problem of what architectural style to employ in designing a university building has taken on a peculiar complexity in modern times. Historically one simply built in the current or "going" style, whether starting in from scratch on a brand new foundation or adding a new unit to an already established school. European universities still tend to follow that policy when adding new buildings. In the United States we have been less sure of ourselves, hence the dilemma. In adding to an old college the issue has been whether to build in the style current at the time the institution was originally set up and so add buildings to "harmonize" with the existing structures, or to build in the style current at the time of the contemplated additions. This was the problem faced by Shepley, Rutan & Coolidge and their successors Coolidge, Shepley, Bulfinch & Abbott and also Shepley, Bulfinch, Richardson & Abbott at Harvard University. But they were earlier confronted with the related problem of what style to use on a new university. We saw that at Stanford University in California in the late 1880's the firm followed the European tradition. To the partners, Richardsonian Romanesque-cum-Byzantine *was* the going style and so they used it. At the turn of the century they were not so sure nor were the members of the governing board of the newly endowed University of Chicago.

The University of Chicago was designed in a modified version of Tudor Gothic as so many American universities have been—reflecting the influence of the Universities of Oxford and Cambridge. A master plan was set up to utilize the land on the south side of the city formerly occupied by the World's Fair of 1893. Between 1900 and 1916 a dozen buildings were built on the site by the firm and after that time the work was continued by Coolidge & Hodgdon.

The Chicago commission, coming on top of the Stanford University project, undoubtedly attracted the attention of other university authorities. Three major university commissions followed: the complete laying out of new campuses for the University of Oklahoma at Norman and Southern Methodist University at Dallas, both in 1910, and for the University of Nebraska at Lincoln by Coolidge & Hodgdon in 1920.

The firm's last important job undertaken in the Tudor Gothic mood was a three-million-dollar hospital and medical school built at Nashville, Tennessee, for Vanderbilt University, finished in 1925 (Fig. 9).

More intimate and somewhat more mediaeval in feeling than the larger buildings at Chicago and Nashville were the dormitory and library at Elmira College, Elmira, New York, also in the late English Gothic idiom. These buildings were built of field stone with cut stone window and door frames. They were completed in 1927.

Wren-and-Georgian

The last borrowed style of the firm's frankly eclectic middle period was one which they made particularly their own—English Post-Renaissance of the eighteenth century.

The firm's great monument in the English Post-Renaissance style is Harvard University since Shepley, Bulfinch, Richardson & Abbott and their predecessor firms are without question the Harvard Architects. Even omitting the University Hall of an earlier Bulfinch, Richardson's Sever Hall begins a long period of intimate association between the partners and the university.

At Harvard the decision was made in the 1890's to follow the architecture of the earliest extant buildings, Massachusetts and Harvard Halls and the Holden Chapel, and return to the red brick and stone trim of the eighteenth century. This marked a break with the earlier tradition of building in the "going" mode at the time additions were made which had produced Sever Hall and the less felicitous Grays and Matthews Halls.

First fruits of the new decision were two dormitories on Oxford Street at the extreme north end of the university premises, Perkins and Conant Halls (1895). From that time on the red brick buildings came along in succession, Stillman Infirmary (1901 and 1905), the Freshman dormitories by the Charles River (1914), Lehman Hall (1925), the Fogg Art Museum (1927).

Culmination of this building program was the designing in the late 1920's and early '30's of the Harkness Houses, a series of seven dormitory groups organized on the lines of the several colleges of the English universities. Three of these units were built from the ground up while the re-

FIG. 9 Nashville, Tenn. Entrance to the Vanderbilt University Medical School. (Tebbs and Knell photo)

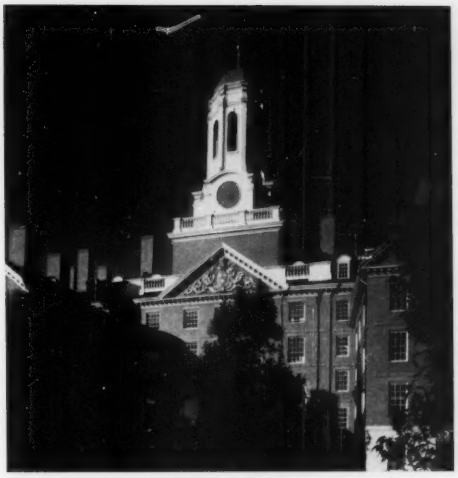


FIG. 10 Cambridge, Mass. Dunster House, Harvard University. Southwest elevation. (W. M. Rittase photo)

maining four incorporated parts of the existing plant including the firm's Freshman dormitories.

Most successful of the Houses was Dunster House (Figs. 10 and 11), an adroit handling of a difficult triangular site and a handsome composition. Less successful were the copies of such recognizable earlier buildings as Independence Hall, the Old State House, Boston, and Wren's wing of Hampton Court Palace.

The last eighteenth-century-dominated building at Harvard was the Littauer Center, a virtual replica of the grey Chelmsford granite Bulfinch building at the Massachusetts General Hospital.

The full impact of the firm's Harvard University is best seen from the Boston side of the Charles River opposite the Houses where the great bend in the river is almost a solid wall of Shepley, Bulfinch, Richardson & Abbott Georgian brick with the skyline cut by the House cupolas, the mass of the Indoor Athletic Building (1931) and the more distant Wren-like white spire of the Memorial Church (1933) in the College Yard.

The Memorial Church brings to mind the firm's All-Souls Church in Washington (1924), which closely follows Gibb's design for St. Martin's-in-the-Fields, London.

The Georgian style lent itself admirably to private houses, large and small. Among the great houses designed for the pre-servantless days that followed the outbreak of

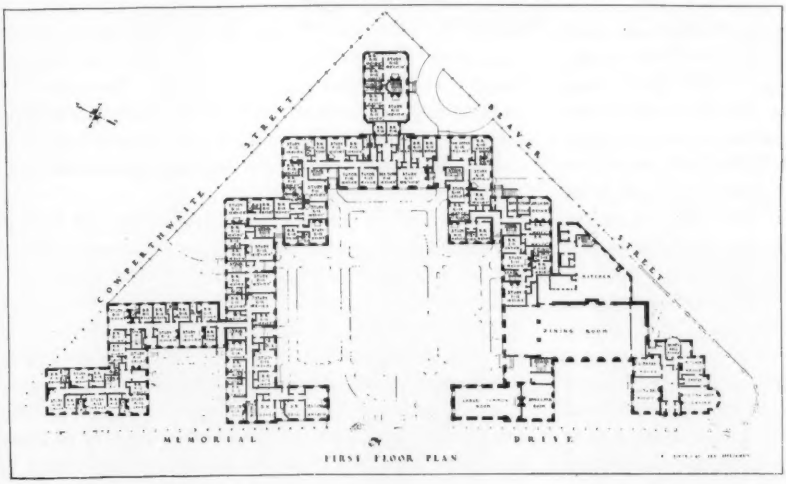


FIG. 11 Cambridge, Mass. Dunster House, Harvard University. Plan.

the second World War were those for: Norman B. Ream, Thompson, Connecticut (1900); George H. Wightman, Brookline, Mass. (1902); G. W. Norton, Louisville, Kentucky (1902); Edward S. Grew, West Manchester, Mass. (1904); Robert T. Lincoln, Manchester, Mass. (1905); T. C. Bremer, Brookline, Mass. (1906); and N. W. Harris, Lake Geneva, Wisconsin (1906).

The English Post-Renaissance was employed for institutions and commercial and public buildings as well. Among the earliest was the administration building for the McLean Hospital, Waverley, Mass. (1895), a contemporary of Conant and Perkins Halls at Harvard University. In the same year the pavilion for disturbed males was completed for the similar institution at Medfield, Mass. The Chicago Orphan Asylum of 1898 and the Congregational Building, Boston, of the same year, were adaptations of the style without pretense to correctness.

It has been mentioned that the firm were the architects of Harvard University. It is also fair to say that they have been the architects for the Massachusetts General Hospital, Boston, the Marine Biological Laboratory, Woods Hole, Mass., and the Rockefeller Institute for Medical Research of New York and Princeton, New Jersey. At all three of these institutions they built buildings reflecting more or less Georgian influence.

THE NEW PERIOD

The designing and execution of the New York Hospital-Cornell Medical College (Fig. 12) opened up the third and most recent phase of the history of the firm of Shepley, Bulfinch, Richardson & Abbott and their forerunners in the partnership. This vast enterprise still ranks as the largest single commission undertaken by the firm. Its peculiar significance is that it marks the return from eclectic to creative architecture and the imaginative treatment of ground plan as well as elevation.

The New York Hospital-Cornell Medical College is a magnificent mass of architectural blocks skillfully disposed in a pyramidal composition within the New York zoning envelope. It dominates the entire Upper East Side of Manhattan Island with its thirty stories and three city blocks of ground space. The exterior finishing material is grey semi-glazed brick. Decoration is omitted but severity is tempered with subsidiary interest in the bold handling of designs in the brickwork and the recurrent use of the ogival arch for the top course of windows in each unit and for the culmination of vertical bays, a treatment borrowed from the mediaeval Palace of the Popes at Avignon which in no way detracts from the modernity of the whole.

The plant provides for five hospitals accomodating a thousand patients and a medical school complete with all the dormitory and recreation areas for staff, students and service employees. The hospital authorities report that it has remained an efficient building despite its vast size except that there is not enough plumbing because in modern surgical practice patients become ambulant sooner than they did when the hospital was completed; hardly a foreseeable complication.

While the New York Hospital was building the firm undertook its second major venture in the new, freer spirit, the Harvard Biology Laboratory (1930–32). This is a simple, straightforward, flat-roofed, rectangular building making use of large vertical glass areas for illumination and to enliven the exterior. Construction is of reinforced concrete finished in red brick to conform to the general material used in adjacent buildings. The touch of sheer genius in its decoration is the bold frieze in incised relief by the sculptress K. Lane[16]—deeply cut right into the bricks—showing a herd of elephants sweeping across the top range of the façade.

Employing much the same general idea of simple design with vertical panels of window area[17] separated by strips of brickwork—in this case grey in color—is the Parcel Post Building, Boston (1935–38).

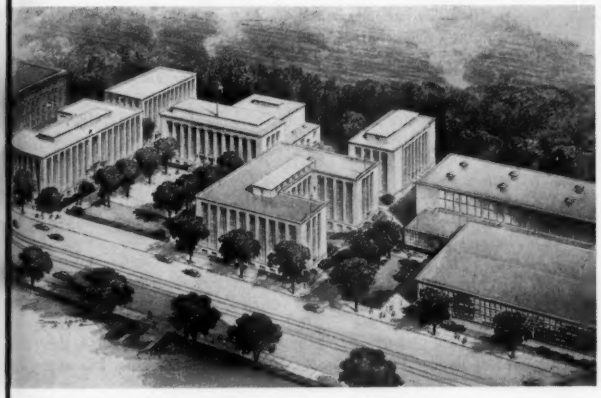
The individual buildings included in the general layout (Fig. 13) for Northeastern University in Boston (1942–58) follow this treatment which involves no stylistic mannerisms but relies for its success on excellence of proportion and skill in the placing of masses.

The most original phase of the firm's architectural design is found in their solution to the problem of how to build in the contemporary manner and at the same time retain the materials and feeling of the New England building tradition. The outstanding examples of this approach are the Fitchburg (Mass.) High School (1937) and the New Hemenway Gymnasium at Harvard University (1937–39) (Fig. 14). Both are marked by extreme simplicity, red brick surfacing and the use of cupolas which hint at the Georgian scene but are handled with a refreshing crispness and cleanness of line.

Two other buildings with similar treatment but tending toward the mannerisms of the International Style are the Gloucester (Mass.) High School (1939–40) and Lamont Library, Harvard University, (1947–48). These have the more modish flat roofs but preserve the older materials to such an extent that the Lamont Library, for example, looks moderately at home among the Georgian replicas that surround it in the College Yard.

Descendants of the New York Hospital are the George Robert White Memorial Building, the tall central unit of the Massachusetts General Hospital, Boston (1936–43), and the more horizontal BB Chemical Company laboratory in Cambridge, built at the same time though completed sooner. These were the first important breaks with the past following the Harvard Biology Laboratory and the Parcel Post Building and are somewhat more derivative in their use of ribbons of glass and contrasting ribbons of blank wall. Both also make use of the interesting texture of

12 New York. New York Hospital. (Sigurd Fischer photo)



13 Boston, Mass. Northeastern University. Rendering.

FIG. 14 Cambridge, Mass. New Hemenway Gymnasium, Harvard University.

FIG. 15 Boston, Mass. Logan International Airport. Rendering.

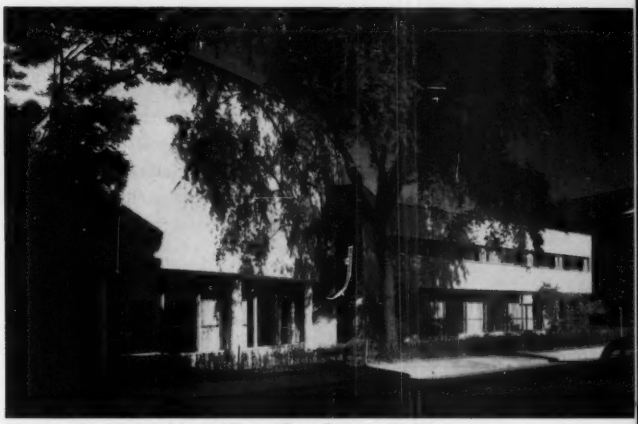


FIG. 16 Cambridge, Mass. Allston Burr Lecture Hall, Harvard University. West elevation.

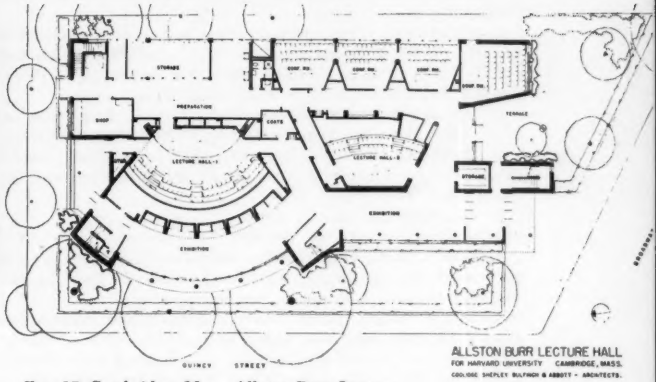
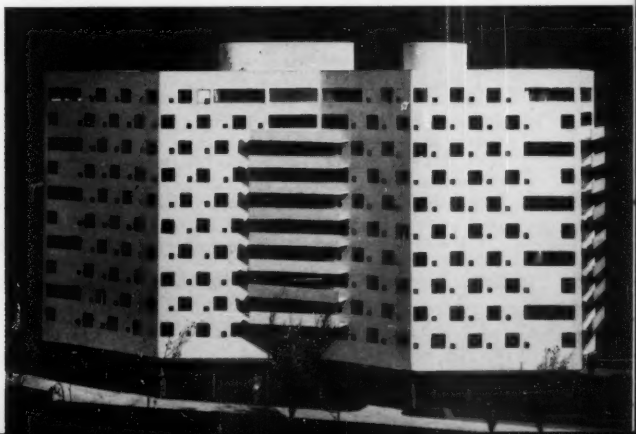


FIG. 17 Cambridge, Mass. Allston Burr Lecture Hall, Harvard University. Plan.

FIG. 18 Indianapolis, Ind. Apartment house (projected). Model showing street elevation.



granite-like glazed pressed brick made up to the firm's own specifications.

Among the most striking examples of the firm's recent work are the following: The master plan for Logan International Airport, Boston, a complex of crescents conceived to combine compactness and the avoiding of great distances between parts with maximum plane-service accommodation (Fig. 15); the Gordon McKay Laboratory at Harvard University with its interesting handling of glass surfaces; the Allston Burr Lecture Hall, also at Harvard, which has a particularly effective solution to a difficult plan problem, though it could hardly be more incompatible with its more traditional neighbors (Figs. 16 and 17); the Manchester (Massachusetts) Memorial School and its auditorium; an apartment house projected for the Clowes family of Indianapolis (Fig. 18) but since abandoned; the American military cemetery and memorial now building at Margraten, The Netherlands; and the new Quincy House for Harvard University.

CONCLUSION

In looking over the period from 1886 onward we are considering a time when architecture in the United States went from the often absurd but always forthright Victorian into a period of dry, "correct" eclecticism, and then in the 1930's emerged into a more creative phase—though its creativity was threatened by premature crystallizing into a "style." Throughout this period the work of Shepley, Bulfinch, Richardson & Abbott and their predecessors was solid and honest and as good as that of the best conventional architectural offices. With the design of the New York Hospital group they made a strong bid to regain the leadership no one in this country had achieved since H. H. Richardson's death. More recently they have been markedly successful in inducing a predominantly conservative, institutional clientele to accept more and more imaginative and original designs.

UNIVERSITY OF VIRGINIA

1. The source of information used in this paper is, except where otherwise noted, the records of the firm provided through the kindness of Henry Richardson Shepley, senior partner. Acknowledgement is also made of the many courtesies of Francis V. Bulfinch, Louise Perkins Gebelein (Mrs. George C. Gebelein, Jr.), Jean Paul Carlhian, Joanna Hale and the other members, past and present, of the Shepley, Bulfinch, Richardson & Abbott office who made this study possible.

2. At the home office the firm's names have been the following: Shepley, Rutan & Coolidge (1886–1915); Coolidge, & Shattuck (1915–1924); Coolidge, Shepley, Bulfinch & Abbott (1924–1952); Shepley, Bulfinch, Richardson & Abbott (1952–).

3. The standard works on the career of H. H. Richardson are M. G. (Mrs. Schuyler) Van Rensselaer, *Henry Hobson Richardson and His Works* (Boston & New York, 1888), and Henry-Russell Hitchcock, Jr., *The Architecture of H. H. Richardson and His Times* (New York, 1936).

4. Van Rensselaer, *op. cit.*, p. 140.

5. Hitchcock, *op. cit.*, pp. 283–284.

6. Perry E. Borchers of The Ohio State University has a paper in progress on the Cincinnati Chamber of Commerce Building with illustrations contrasting design and execution.

7. Russell Sturgis, "Shepley, Rutan & Coolidge," *Architectural Record*, VI (July-September, 1896), 4.

8. *Op. cit.*, p. 288.

9. *Op. cit.*, p. 11.

10. The Bell Telephone Company, Mermod-Jaccard, Mallinckrodt, "Famous," Knox Estate, and Tiffany Buildings.

11. *Op. cit.*, p. 7.

12. Third edition revised by Robert Kerr (New York, 1891), II, 368. Noted in Montgomery Schuyler, "The Romanesque Revival in America," *Architectural Record*, I (July, 1891–July, 1892), 189.

13. *Op. cit.*, p. 19.

14. *The Nineteen Hundred* (Paris, 1899) p. 9. Later foreign work of the firm included buildings for the Constantinople College for Girls (1914–24) and the Peking Medical School and Hospital (1920)—the latter with Chinese roofs.

15. *Op. cit.*, p. 23.

16. Mrs. F. C. Weems of New York City.

17. The idea of vertical-strip windows, minimizing the spandrels, goes back at least to the work of Town & Davis in the first half of the nineteenth century. See R. H. Newton, *Town & Davis, Architects* (New York, 1942), pp. 142 and 250. Note the use of this treatment at South Hall, Wabash College, Crawfordsville, Indiana, begun in 1835 from plans purchased from a "_____ Town, Esqr." who could only have been Ithiel Town of Town & Davis since that firm was employed in 1831–35 to design the Indiana capitol at Indianapolis, 45 miles away.

STATISTICAL APPENDIX

Through the extreme kindness and candor of Henry R. Shepley, there were made available to the writer complete figures on gross earnings of the firm for each year of its existence from 1886 through 1952. In order to protect the interests of the firm, these statistics are reproduced here as percentages of the earnings for 1887, the first complete year of operations.

Through the great courtesy of John C. Swartley, Chief Statistician of the American Telephone and Telegraph Company, we are authorized to publish the index of the growth of industrial activity in the United States compiled by his Division (converted from 1947 equals 100 to 1887 equals 100) to show a comparison of the architectural firm's earnings with general business conditions for the period. (Figures from *Index of Industrial Activity*, Chief Statistician's Division, Amer. Tel. & Tel. Co., July, 1955.)

It should be noted that the two series are not strictly comparable, and that the gross earnings data of the architects' office are for only a single firm and have no adjustment or internal mechanism for correcting for changes in the purchasing power of the dollar or other extraneous factors such as possible irregularities in the rendering and collecting of bills for professional services.

Several observations may be made from an examination of these figures. First, as might have been anticipated, the architectural business tends to follow—though not very closely—the trend of general industrial activity but to lag behind it. Business has to prosper for some time before businessmen begin to think about building new factories, office buildings, or homes, or starting money-raising campaigns to build new institutional plant. When business activity goes into a decline, on the other hand, the architect's commissions are partly protected for a while by their contractual nature and the length of time it takes to complete construction begun

SHEPLEY, BULFINCH, RICHARDSON & ABBOTT, ARCHITECTS. GROSS EARNINGS, 1887–1952 (*expressed as percentages; 1887 equals 100*). *For comparative purposes, these figures are listed in parallel column with the index of The Growth of Industrial Activity in the United States (converted from 1947 equals 100 to 1887 equals 100) of the Chief Statistician's Division, American Telephone and Telegraph Company.*

Year	*Gross Earnings*	*Index of Growth of Ind. Activity*	*Year*	*Gross Earnings*	*Index of Growth of Ind. Activity*
1887	100	100	1920	105	412.0
1888	173	104.6	1921	140	325.9
1889	183	110.1	1922	170	417.5
1890	86	118.8	1923	355	469.8
1891	75	122.1	1924	391	439.3
1892	42	131.9	1925	335	500.3
1893	79	117.7	1926	360	531.9
1894	66	114.4	1927	399	531.9
1895	41	135.2	1928	521	559.2
1896	43	124.3	1929	925	610.4
1897	38	134.1	1930	1189	514.5
1898	56	152.6	1931	591	439.3
1899	72	167.9	1932	200	331.4
1900	86	167.9	1933	145	382.6
1901	66	189.7	1934	105	418.6
1902	91	202.7	1935	96	505.8
1903	168	210.4	1936	83	603.9
1904	121	208.2	1937	152	631.1
1905	90	241.9	1938	128	484.0
1906	88	262.7	1939	99	626.8
1907	50	268.1	1940	133	716.1
1908	91	216.9	1941	148	903.6
1909	87	264.9	1942	93	983.2
1910	61	279.0	1943	99	1066.0
1911	123	280.1	1944	142	1075.8
1912	131	321.6	1945	192	1009.3
1913	142	336.8	1946	404	987.4
1914	97	311.7	1947	471	1090.0
1915	139	335.7	1948	498	1119.4
1916	106	397.9	1949	537	1035.5
1917	74	413.1	1950	741	1194.6
1918	49	412.0	1951	785	1262.2
1919	70	372.8	1952	893 (est.)	1255.7

when times were good. (It should be noted that although architectural practice is geared to the building industry in general, in the post-World War II period at least, new construction as reported in the gross national product figures of the United States Department of Commerce, Office of Business Economics, *National Income; A Supplement to the Survey of Current Business* [Washington, 1954], pp. 162–163, Table 2, has increased year by year much faster than general industrial activity and that much faster, of course, than architectural practice.)

Second, war is not good for architectural business. This applies to building in general and is self-explanatory.

Third, in considering the history of Shepley, Bulfinch, Richardson & Abbott and its predecessor firms, we can account for certain extreme fluctuations by reviewing the circumstances: The marked prosperity of the office in the 1880's (not equalled, in fact, until after the post-World War I depression) reflects the magnitude of the partners' obligation to H. H. Richardson. Again, the tremendous upsurge of business in 1927–30—continuing to expand well after the sharp decline in general business—is explained by a few exceptionally large commissions coming on top of the firm's steadily expanding volume of business. Most important in this connection were the New York Hospital, the Lakeside Hospital in Cleveland, and the Harvard House Plan buildings.

AMERICAN NOTES

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120 South Third Street, Philadelphia 6

A TRAUTWINE BUILDING IDENTIFIED

By AGNES ADDISON GILCHRIST

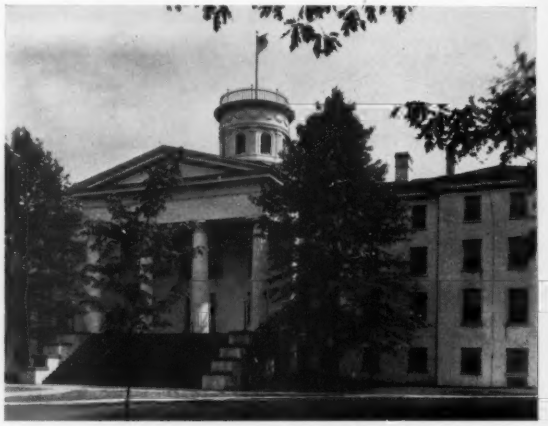
John Cresson Trautwine (1813–1883) of Philadelphia is well known to engineers as the author of the *Engineer's Pocket Book* which was first published in 1871. The DAB biography of Trautwine cites his engineering work in Tennessee, Panama, Honduras and Pennsylvania and mentions that he was a pupil of William Strickland in 1828. No mention is made of any buildings designed by him.

In the course of the Historic American Buildings Survey currently being conducted in Adams County, Pennsylvania, by the National Park Service Historian, Frederick Tilberg, the first building of the Gettysburg College was naturally included as it has exceptional architectural merit. In doing the historical research on "Old Dorm," as the building is popularly called, with the assistance of Robert Fortenbaugh, Professor of Literature and authority on the history of Gettysburg College, Mr. Tilberg found that it was designed by the Philadelphia architect, John Cresson Trautwine. In September, 1835, the Board of Trustees of the College authorized the erection of a college building according to his plans which would measure 40 feet by 150 feet and not cost more than $12,000. After the bids were in it was found that the four floors originally planned could not be built for the amount allotted so the contract was let to Henry Winemiller of Chambersburg, Pa., to erect the building with three floors for $13,350 in October, 1837. The Board again changed its mind the following year and in 1838, the original plan was executed by Samuel Hunter of Gettysburg for $23,000.[1]

The plan which Trautwine presented in 1835 and which was accepted was for a temple-style edifice with four columns in the portico. The wings which contain more rooms and magnificent stairs at either end were added in 1889. The unusual feature of the building is a round tower adorned with a wreath of swags. Many features of the building show that Trautwine was the pupil of Strickland, especially the treatment of the portico on a high base which requires that the front entrance be reached by a high flight of broad steps. The same thing in found at the U. S. Naval Home on Grays Ferry Road in Philadelphia which was being built at the time that Trautwine was in Strickland's office. As the College has always been proud of its first building it is in good repair and still in use.

Another reference to Trautwine's architectural work is to be found in Samuel Hazard's *Register of Pennsylvania*, Vol. XII, 258. It notes that in 1833 he competed against his teacher in presenting a plan for a monument to Washington in the newly opened Washington Square in Philadelphia. His design would have cost $25,000 less than Strickland's to erect. Common Councils tabled the matter and no monument was erected.[2]

Some of the water color and wash drawings which Trautwine did while he was with Strickland have been preserved in the library of the Franklin Institute in Philadelphia. There are six drawings, three of which are of Strickland-designed buildings in Philadelphia, the First Moravian Church, the Chestnut Street Theatre and the Arch Street Theatre. Two are not identified, but one is signed and dated Oct.10,1828. The sixth drawing has



Gettysburg, Pa. "Old Dorm," Gettysburg College, 1835–38. (Frederick Tilberg photograph)

the following inscription "Jas. H. Fyffe's House, John C. Trautwine, Architect & Engineer, 1840." It shows the front elevation of a two-story house with lower wings and a Greek Revival one-story porch in front of the main entrance. Perhaps this building was erected and is still standing somewhere. There may be more Trautwine buildings about. The "Old Dorm" at Gettysburg shows that he could design striking buildings as well as efficient railroads.

1. *Gettysburg Times*, Gettysburg, Pa., September 20, 1957. A special issue of the *Times* was devoted to the history of Gettysburg College in honor of its 125th Anniversary. One article was devoted to the history of "Old Dorm."

2. Until May, 1828 (Hazard's *Register of Pennsylvania*, I, 349), Washington Square was the potter's field conveniently located by Robert Smith's Walnut Street Prison. A plan for Washington Square by William Rush is in the Ridgway Library of the Philadelphia Free Library. John Haviland was commissioned by the city in 1828 to design lamps for the Square and seats were ordered for it. It soon became a fashionable public garden.

City Councils for years had felt that a monument to Washington should be erected. Strickland had designed a mammoth monument in 1818. His design seems to have been taken from a book pub-

lished in 1729 which he owned, now in the possession of Robert Raley, with designs by the French architect and designer, Courtone. On February 22, 1833, a cornerstone for the monument was laid with Masonic honors, but Councils never appropriated money for the monument.

John Haviland's First Presbyterian Church was built on the Square in 1828, and John Notman's design for the Athenaeum was built in 1845–47. It was the fashionable square in the second quarter of the nineteenth century. It was followed by Rittenhouse Square as the center of fashion. As early as May, 1832, John Trautwine began working on the layout of Rittenhouse Square, which was a muddy swamp at that time (Hazard's *Register of Pennsylvania*, IX, 393). A monument to Washington was finally erected (in the form of a bronze casting of the Houdon portrait) in 1957.

EARLY PREFABS AGAIN

Philadelphia, 1791

Although we know of earlier Philadelphia prefabricated buildings (e.g., in the letter about Amos Jones' houses for Jamaica in 1755, "American Notes," October, 1954) we think this new one has an interesting specification. It was found in *Dunlap's Daily American Advertiser* for December 2, 1791, and brought to our attention by David H. Wallace and William M. Campbell. The frame was for sale by auction at William Colliday's workshop in Wood Street, between Second and Third:

A very strong, new frame of a building, which has not yet been put up, of the following dimensions, viz. 50 feet long, 25 feet wide, and 10 feet high; the rafters about 14 feet long; the scantling is of the following sizes, viz. The cills 8 by 8 inches; the posts 7 by 7 inches; the lower joists 3 x 12 inches, and 16 inches apart; the joists of the upper floor 3 by 10 inches. All the principal timber is of white oak; the whole ready to put up, and all the materials prepared to enclose it, except the shingles. It is well calculated for a store, or, by the addition of another story, may be finished for a barn.

Panama, 1850

Marion Ross, SAH, University of Oregon, has sent us a lurid description of the American prefab town put up at Chagres, Panama, for the convenience of the Gold Rush trade.

In choosing the place of the American settlement, the exclusive considerations of a reckless love of gain must have decided. In a locality known to be sickly in the highest degree, it was built on the water's edge, on a low and muddy ground. But it stood on the deep-water side of the river, and brigs and schooners could unload a few hundred steps from the houses. These had all been sent ready-made from New York. The most prominent among them was the *Irving House*—the principal "hotel" of the place. At New York I had seen it advertised and recommended as a superior establishment, "in whose spacious halls the traveller was sure to find the comforts and commodities of civilization as it exists in the temperate zone, combined with all the luxuries of the tropics." It was a large barn-like frame-house of two stories, each of them forming one single undivided room. In the lower story a hundred or more travellers, sitting on four long benches of rough boards on both sides of two long tables of the same material, were treated with salt pork and dried beans, while in the upper room several hundred persons, sick with fever, were either shaking from frost or burning in the paroxysm of heat, and those who were able to keep up were sitting on their boxes and trunks in order to secure them from being removed by the numerous thieves and robbers who at that time infested this dangerous highway of travelling adventurers.
(Julius Froebel, *Seven Years' Travel in Central America, Northern Mexico, and the Far West of the United States* [London: Richard Bentley, 1859], pp. 5–6.)

• • • • • •

Some other prefabricated hotels were carried right over the Isthmus, presumably on muleback, to be erected in San Francisco. One of galvanized iron made by a New York manufacturer named Naylor was intended to be called "The Iron Hotel." A three-and-a-half-story structure, 90 by 180 feet, was fabricated by Spaan & Co. of Park Row to be erected in San Francisco as "The Astor House." The press reported that "it will have 100 rooms, 10 stores on the second floor, and a wide ornamental entrance."

While most of these houses were made for the California trade, the same writer reported thirty or forty ordered for Mr. Penix of Valparaiso and a like number for Mr. John Parrot, U.S. Consul at Mazatlan (*The Polynesian* [Honolulu], March 2, 1850). A photograph of Puerto Montt, Chile, in *Photography* (July, 1944) shows a street of wooden houses looking like part of a New England port town and not improbably prefabricated in one.

The only iron houses of the period we know to be still standing are some Australian examples illustrated in *Early Melbourne Architecture* (Melbourne, 1953), pp. 140, 160. A copy of this volume was kindly sent us by Mrs. Philip Spaulding of Makiki Heights, Honolulu.

BOOKS

PAUL F. NORTON, *Editor*
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Cecil Stewart, *Simpson's History of Architectural Development*, Vol. II, *Early Christian, Byzantine and Romanesque Architecture* (New York: Longmans, Green and Co., 1954), 288 pp., 24 plates, 128 illus., 2 maps. $5.75.

This volume of the revised edition of Simpson's *History of Architectural Development* is very disappointing. A major revision was made with some expansion, some useful rearrangement of material, and many new and improved illustrations. Unfortunately not all of the changes were improvements and some old errors survived. The most serious cause for dissatisfaction is the fact that the publication date, 1954, gives a promise of up-to-date revision which the volume fails to fulfill. For example, the most recent publication on French Romanesque architecture cited dates from 1929 and the author-editor seems unaware of important developments like the researches of J. Puig i Cadafalch published in the 'twenties. Such rich sources as Joan Evans, *The Romanesque Architecture of the Order of Cluny* (1938), and Marcel Aubert, *L'architecture cistercienne en France*

(1947), are equally ignored; nor is this characteristic of the section devoted to Romanesque architecture alone. Of eight sources cited on Early Christian art, one is recent, the other seven are all nineteenth-century.

The most radical change in the new edition results from the laudable decision to separate Romanesque and Gothic which were treated together in volume two of the original edition. The Gothic material has been reserved for a separate volume, called, curiously enough, "Mediaeval."

The chapters on Early Christian and Byzantine have been reworked and the Byzantine section considerably enlarged. New photographic illustrations are much improved over the earlier edition and there are many new and useful line cuts in the text. A few of the old illustrations will be missed but the pictorial improvement is the most striking feature of the new edition.

The source of much confusion throughout the rest of the volume is revealed but not faced in the introduction. Early Christian architecture is defined in terms of the basilica type, Byzantine in terms of the dome-on-pendentives structural unit, and Romanesque (with a bow to the vault) in terms of a period, 800 A.D. to the beginning of the twelfth century. This creates ambiguities which Simpson and the present editor resolve in different ways. For example, Simpson notes the domes on St. Anthony at Padua but points out that it is western in all other respects. Similarly he lists comparable examples such as the church at Molfetta and the domed churches of Aquitaine as Romanesque. In the new edition anything with a dome is Byzantine regardless of other considerations. This may have the virtue of consistency but confuses the lines of architectural development completely.

The chapters on Early Christian building are the least changed parts of the new edition. The tomb of Santa Costanza still appears as both an octagon and circle and there is still no explanation of how the nave walls of St. Peter's and other Roman basilican churches could be carried on lintels. Arguments for the domestic origin of the basilica are added, while Romanesque cloisters, Constantine's churches in Palestine, and much of the Syrian material (especially illustrations) are deleted. It is discouraging to meet the old cliché about Roman technical decadence again. The Baths of Diocletian and the Basilica of Constantine cannot reasonably be considered evidence of two hundred years of degeneration since Trajan's days, and the erection of the basilica of St. Peter required engineering of no mean order. The statement that for "all the basilican churches in Rome, the chief object was to provide an inexpensive building. . . ." also should raise some questions.

The section on Byzantine architecture has been considerably enlarged. A third period of Byzantine building is added (for the thirteenth to fifteenth centuries) and the extension of the Byzantine tradition in Russia is given brief attention. The choice of the Cathedral of St. Basil in Moscow to exemplify the Russian fantastic development of Byzantine forms seems unfortunate since, of the many Russian examples to choose from, it would be difficult to find one which better demonstrated the persistence of the northern tower church tradition and showed less Byzantine influence in plan, structure, or even decoration.

The Byzantine buildings are presented with contagious enthusiasm but the inclusion of some (but not all) Romanesque buildings showing marked Byzantine influence makes for confusion. Such southern Italian buildings as St. Mark, Rossano, and La Cattolica, Stilo, belong among the peripheral Byzantine monuments, but the church at Molfetta does not (as Simpson clearly realized). The paired bell towers and much decorative detail speak eloquently of the north. The structure also is hardly Byzantine in spite of the three domes, for the plan is basilican with quadrant vaults over the aisles and squinches for transitions to the domes. One of the "domes" is not even a true dome but a corbel vault in the manner of the trulli of the nearby countryside and Alberobello.

The weakest part of the new edition is the section dealing with western architecture from Charlemagne to Gothic. A certain emphasis on Anglo-Saxon, Norman, and English is understandable, but thirty-three pages on these, set against three for Burgundy hardly gives a balanced idea of "development."

There are four chapters dealing with *Historical Background, Planning, Structure,* and *Details and Decoration.* These are followed by six chapters devoted to geographic areas.

There is a new chapter on Romanesque in Spain and one on secular architecture. The Spanish chapter comes almost as an addendum so that Asturian architecture of the ninth century comes into the developmental picture only after nearly three centuries of subsequent building have been discussed. The chapter is further marred by errors such as the statement that the Church at Santiago "is identical in plan, proportions and general design to the Church of S. Sernin, Toulouse." Similar, yes! But identical? One has a three-aisle nave and the other five which makes for some differences in plan, section and proportion. The chapter on secular architecture starts with the walls of Byzantium and then is limited to English examples. As the author suggests, the result seems rather "parochial." The lack of knowledge of all pre-Gothic secular architecture on the Continent is not quite as complete as he indicates.

The decision to modernize Simpson's volumes had merit. The decision to make a major revision was good. This volume of the revision fails.

HARRY H. HILBERRY
Syracuse University

Peter Brieger, *English Art 1216–1307, The Oxford History of English Art* (Oxford: Clarendon Press, 1957), 299 pp., 23 figs., 96 plates. $11.50.

This distinguished volume takes its place effectively between those already published in the same series by Boase (1100–1216) and Evans (1307–1461). The period is defined by the reigns of Henry III (1216–72) and Edward I (1272–1307). The author makes it clear that he considers the starting date logical but feels that the reigns of Edward I and Edward II (1307–27) belong together stylistically. While this gives the latter part of the work something of a cliff-hanger touch, which may or may not be appropriate in this context, nothing can detract from the fresh, vigorous presentation of the material covered.

The familiar architectural categories, based on details of decorative vocabulary, were not adequate for a consideration of art in a less restricted sense and one of the most stimulating aspects of this work is the definition of more universally significant stylistic groupings. Three style-periods are proposed; the Episcopal (1220–1245), Regal (1245–1270+), and Seigneurial (1270+ to 1330±). They are not presented as an oversimplified system nor as a set of Procrustian pigeonholes, but emphasize the aims and importance of the great secular clerics during the early reign of Henry III and the quite different effect of direct royal patronage during the rest of his reign. The Seigneurial style is more nebulous partly due to the fact that it extends beyond the time scope of this volume, partly because while it is seen in terms of new attitudes and some new stylistic traits, to a large extent it is conceived as the dilution and dissolution of the more positive court style. Whether or not these categories gain currency remains to be seen, but they have the advantage of useful applicability to the visual arts in general and the very considerable virtue of providing both a logical classification scheme and illumination of many aspects of the culture with which they deal.

A detailed summary or description of the work seems out of place. The author has produced a compact and concentrated statement which deserves and demands that it be followed in such detail as he has compressed into his limited space. The text is reinforced by a generous (by economic criteria) collection of well chosen, well reproduced illustrations. The photographic illustrations are grouped at the back of the volume, but since text figures are invariably well placed and footnotes are with the text, the mechanics of reading and reference are smooth and easy. The bibliography is quite extensive and "selective" in the best sense of the term.

For the architectural historian a comparison is suggested with the Pelican volume on British mediaeval architecture by Geoffrey Webb (reviewed *J.S.A.H.*, XVI, No. 3 [October, 1957], 33–34). Both have their special virtues. The fact that the material treated in one Pelican volume (mediaeval sculpture and painting being treated

separately) is distributed over six volumes of the Oxford History has several advantages. Most of these, both scholarly and mechanical, are obvious. For the Oxford History in general and this volume in particular there are clear advantages in somewhat less stringent limitations of space, opportunities to examine limited periods in depth, and, above all, the challenge of dealing with all of the visual arts as related parts of a complex cultural picture. That the last can lead to fresh insights and understanding of architectural development may seem too obvious to merit comment, but if a demonstration is needed this volume provides it. This book clearly belongs among the essential reference works in its field.

HARRY H. HILBERRY
Syracuse University

John Hutchins Cady, *The Civic and Architectural Development of Providence, 1636–1950* (Providence, R.I.: The Book Shop, 1957), 320 pp., illus. $12.50.

Mr. John Hutchins Cady has long been acquainted with the local scene in Providence, and *The Civic and Architectural Development of Providence, 1636–1950,* reflects his deep interest in the growth of the city. The book's emphasis is on the civic growth rather than architectural development. Early chapters deal with the founding of the town by Roger Williams and the first beginnings of streets, wharves, bridges, buildings, and public services. These chapters are illustrated with extremely useful maps, drawn by Mr. Cady himself. There are also references to early sources of information about the settlers and anecdotes of local interest. Maps throughout the book are skillfully used to show the changes made in the waterfront over three hundred years, the laying out of new streets, and the location of early bridges. It is this which interests Mr. Cady more than the actual buildings, for after some "typical" house plans for the first part of the eighteenth century, he shows no plans of any kind.

The book is carefully divided so that each section of the city receives attention and one of its most useful features is that houses, public buildings, or streets are given all the names ever applied to them.

Mr. Cady is at his best in the chapters on the two older sections of Providence, one known as The Neck or the East Side, and the other the Weybosset area, now the business district. Their original appearance can be visualized easily from his text and maps.

For the later years of the eighteenth century and throughout the nineteenth and twentieth centuries, there is a complete account of transportation facilities, including railroads, steamboats, and horsecars, with a multitude of data on the date each segment of a route was put into operation, and the types of vehicles or boats are illustrated.

Although Mr. Cady's heart is clearly with the Colonial and Federal periods, he gives a wealth of information about the nineteenth and twentieth centuries and includes some interesting views of the city during these years. The reader, however, is left to form his own opinions on the appearance of many buildings not illustrated, by such statements in the text as "classic details and academic porches" used to describe a house. Mr. Cady gives the names of architects for all the later nineteenth- and twentieth-century buildings and is very generous about their work, while extremely modest about his own contributions to the local scene. He leans over backwards to avoid criticism of any style or architect, though he sometimes describes a building as "modern" which might better be called academic. It would have helped the reader if the architect's name had appeared with the illustrations as well as in the text. Mr. Cady includes an interesting account of the development of the park system and of the various pieces of sculpture which adorn the city.

Anyone who takes the time to study the text will find much useful information, though it is to be regretted that there were not more illustrations of structures now destroyed and, above all, more plans of significant buildings, since so few plans of Providence buildings after eighteen hundred have ever been published. There is an index but no bibliography.

BARBARA WRISTON
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John Maass, *The Gingerbread Age* (New York: Rinehart, 1957), 212 pp., illus. $7.95.

John Maass is no historian as he cheerfully (even gratefully) confesses in his preface. Emigrating from Austria, he has become the art director for a large Philadelphia advertising agency. Both his nationality and his vocation may have conditioned Maass' enthusiasm for American nineteenth-century building. Though widely traveled, he tells us that he "had never seen more fanciful houses."

As an affectionate tribute to Maass' hobby, *The Gingerbread Age* might have become just another picture book of quaint Americana. It is the sensitive vision of the author which makes the photographs and reproductions of old line cuts worth the historian's attention. The text, appreciatively and lightheartedly based upon recent scholarship, is essentially for the layman.

Maass is little attracted to those "progressive" currents in nineteenth-century architecture which anticipate modern architecture, such as Giedion's metal-and-glass technology or Scully's stick and shingle styles. It is true that a few cast-iron fronts appear, together with the Brooklyn Bridge, the train shed of the old Grand Central Station and other ferro-vitreous enclosures, while stick style structures are inevitable. But Maass is primarily interested in the pictorial qualities of what he sees rather than in either their structural or planning potential. "Their boldness and vitality can teach a lesson to the conformist present." As such, he sees the buildings as one who has experienced the violence of a Motherwell collage or of Le Corbusier's chapel at Ronchamp.

Heavy, awkward, torn shapes in fierce sunlight and shadow, their cruelty occasionally relieved by delicate pattern, these photographs speak directly to the "new brutalist" vision. Here are vigorous plastic effects of wall surface and skyline. Here are tensions between window and wall—two small rectangles in the broad field of a false front, the compressed quality of arrogantly vertical windows in a mansarded mansion, the scattered effect of openings in a huge Pennsylvania barn. Here are forms haunted by image. A stocky newel post beside a San Francisco gate glowers like some primitive fetish. Open shutters on a Rhinebeck church evoke a trio of visored figures full of threat. The inevitable Oriental pleasure dome makes a superb appearance in the greenhouse in Golden Gate Park. Thus, what Giedion has dismissed as the reactionary structures of the nineteenth century, at last begin to teach their lessons to the modern eye.

Unfortunately, Maass seems largely unconscious of the true position of his volume within the recent spate of architectural Victoriana. Thus, he brings his volume to the present with Edward Hopper's *House by the Railroad,* Grant Wood's *American Gothic,* some Ben Shahn, Charles Addams and Saul Steinberg. Pleasant but trivial. Since Maass intuitively grasps the expressive quality of nineteenth-century architectural forms in his pictorial material from the past, it is a pity that he turned literalistic at the end and did not show us the Victorian esthetic become truly modern.

A more creative conclusion to this volume would give point to the remark of J. M. Barrie with which Maass prefaces his volume: "Don't forget to speak scornfully of the Victorian Age, there will be time for meekness when you try to better it."

WILLIAM H. JORDY
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Arnold Whittick, *Eric Mendelsohn,* (New York: F. W. Dodge Corp., 1956), second edition, 219 pp., 75 pls., 109 figs. $9.85.

The first edition of this book (London: Faber and Faber) was published in 1940, a year before Mendelsohn arrived in the United States where he died in 1953. It covered his career up to his final American phase. The present American edition is larger in format, has 39 more pages, 21 more plates and 61 more figures. The list of Mendelsohn's projects and buildings contains 12 more items.

From 1933 on, when Mendelsohn left Germany, his work was divided between England and Palestine, which was then a British Mandate. In England nothing of much importance was done after

the partnership with Chermayeff was dissolved in 1936. The work in Palestine, however, continued to be rewarding. The Anglo-Palestine Bank in Jerusalem, the research laboratories and the Agricultural College of the Weizmann Institute at Rehoboth were built in the period reviewed in this edition. The Hadassah University Medical Center and related buildings on Mount Scopus (now in no-man's land) were completed early in 1940. With the political situation in Palestine visibly deteriorating, Mendelsohn left for the United States. When he arrived in New York he was 53. He knew America from a trip in 1924. At that time he met Frank Lloyd Wright for whom he had a lifelong admiration.

He came to the United States with a considerable reputation earned particularly in Germany where he was born and trained. His department stores and his Einstein Observatory were well known. An exhibition at the Museum of Modern Art in New York, lectures at architectural schools, and a Guggenheim Fellowship for a book helped him over the difficult first years. With a war on there was not much prospect for building commissions. In 1945 Mendelsohn moved to San Francisco. The Maimonides Health Center in San Francisco of 1946–50 was a work in line with Mendelsohn's previous experience. But the peace opened up for him a new field —synagogue building.

With new congregations springing up in the suburbs and old ones in need of more modern facilities, Mendelsohn saw that there was here a problem for him to solve. He had never seriously considered religious buildings. Whittick reproduces some sketches for "sacred buildings" of 1921–24 of a rather imaginary character. A sketch of a synagogue of 1934, shown in the first edition only, is of a similar nature and Mrs. Mendelsohn informs me that it was made in Palestine without any concrete purpose in mind. The way Mendelsohn had solved the problem of modern synagogue design set the pattern for synagogue building in the United States. To be sure, the conception of a hall of worship combined with a community center in a flexible plan with removable partitions and without a conventional façade was in the air, but it was Mendelsohn with his great prestige who broke the opposition to modern design and cleared the way for the younger architects who were to walk in his steps.

Of the seven synagogues he designed three were built in his lifetime and one was completed in 1954. Mr. Whittick gives a full account of these projects. What we miss is some background material for this work, its relation to the work of other contemporary synagogue architects, and some historical data. Perhaps the introductory survey of European architecture going back to the first experiments in iron construction and drawing largely upon Giedion and Pevsner should have been condensed. Among the other works done in the United States the author points out particularly the Russell residence in San Francisco.

Mendelsohn's relations to Expressionist painters in his Munich student period, noted by Mr. Whittick, contribute to the understanding of his "romanticism." Interesting observations are to be found in the expanded chapter on "Methods of Working," his habit of starting with perspective sketches, his independence vis-à-vis building committees, etc.

Mr. Whittick gives a vivid portrait of this man whom we knew as a strong, self-asserting personality, but who was wearing a glass eye behind his glasses and was fighting cancer with calm determination till the end.

The bibliography, besides being brought up-to-date, includes a larger number of Mendelsohn's older publications. The index gives convenient references to plate numbers.

RACHEL WISCHNITZER
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Books Received

(Mention of a book here does not preclude its subsequent review.)

Abbott Lowell Cummings, *Architecture in Early New England* (Sturbridge, Mass.: Old Sturbridge Village, 1958). n.p.

H. D. Eberlein and C. VanD. Hubbard, *Historic Houses of Georgetown and Washington City* (Richmond: Dietz Press, 1958). $15.00.

S. Giedion, *Architecture, You and Me* (Cambridge: Harvard University Press, 1958). $5.00.

A. Noblecourt, *Protection of Cultural Property in the Event of Armed Conflict* (Unesco Pub., Columbia University Press is American distributor, 1958). $7.50.

P. H. Scholfield, *The Theory of Proportion in Architecture* (Cambridge University Press, 1958). $5.50.

Otto Ernst Schweizer, *Die Architektonische Grossform* (Karlsruhe: Verlag G. Braun, 1958). DM28.

W. Stevenson Smith, *The Art and Architecture of Ancient Egypt* (Baltimore: Penguin Books, 1958). $12.50.

Whitney S. Stoddard, *Adventure in Architecture, Building the New St. John's* (New York: Longmans, Green and Co., 1958). $8.50.

Freeman Tilden, *Interpreting Our Heritage* (Chapel Hill: University of North Carolina Press, 1957). $3.50.

William Willetts, *Chinese Art*, 2 vols. (Baltimore: Penguin Books, 1958). $1.50 each.

Periodicals Received

Archivo Español de Arte, Madrid, Spain. No. 120. Oct.-Dec., 1957. Pp. 355 ff. contain notes on mediaeval buildings restored at Toledo. There is also an article on the choir screen of the Cathedral of Cuenca.

Journal of the Royal Society of Arts, London.

No. 5020. Mar. 1958.
Includes a paper by E. E. Somake, "The Design of Shops Today."

No. 5021. Apr. 1958.
Article by Frederick Gibberd, "The Architecture of New Towns."

No. 5022. May 1958.

Kenchiku Bunka, Tokyo. No. 142. Aug. 1958.

SAH NEWS

THE AUGUST TOUR

The annual August Field Trip of the Society was in upstate New York—Geneva, Rochester, the Finger Lakes, and Corning. Gerda Peterich of Eastman House, Rochester, led the Tour with the help of Harley McKee and Daniel M. C. Hopping. The trip was on the long weekend of August 15–19.

DEGREE IN ARCHITECTURAL HISTORY

The University of Virginia has just announced the establishment of an undergraduate curriculum leading to the degree of Bachelor of Architectural History. The course will be administered by the School of Architecture.